

# KV-M2530E/M2531E

## RM-816

### SERVICE MANUAL



*Spanish Model*

KV-M2530E

Chassis No. SCC-F12H-A

KV-M2531E

Chassis No. SCC-F12G-A

**AE-1C CHASSIS**

MODELS OF THE SAME SERIES	
KV-M2530E/M2531E	KV-E2523E/E2923E
KV-M2520E/M2521E	KV-A2913E
KV-A2113E/A2513E	KV-C2123E

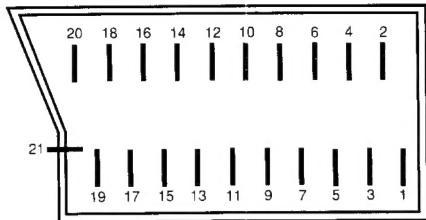
#### SPECIFICATIONS

Television system	B/G/H	Sound output	10W (Music)
Color system	PAL	Power consumption	83Wh (KV-M2530E) 86Wh (KV-M2531E)
Channel coverage	VHF: E2-E12 UHF: E21-E69 CABLE TV: S1-S41 CABLE TV: S01-S05, M1-M10, U1-U10	Dimensions	Approx. 577 x 523 x 491mm (w/h/d)
Picture tube	Hi-Black Trinitron tube Approx. 65 cm (Approx. 59 cm picture measured diagonally) 110°-degree deflection	Weight	Approx. 34kg
Inputs	1 21-pin connector: CENELEC standard including RGB input. Front: 3 Video input phono jack Audio input phono jack S Video input 4pin DIN Y: 1Vp-p±3dB 75ohm C: 0.3Vp-p±3dB 75ohm	Supplied accessories	RM-816 Remote Commander (1) IEC designation R6 batteries (2) [RM-816] Remote control system infrared control Power requirements 3V dc 2 batteries IEC designation R6 (size AA)
Outputs	21-pin connector: CENELEC standard Earphones jack: minijack	Dimensions	Approx. 75 x 221 x 23mm (w/h/d)
		Weight	Approx. 230g (including batteries)
		Accessories supplied	IEC designation R6 Commander

Design and specifications are subject to change without notice.



**TRINITRON® COLOR TV**  
**SONY®**

**21 - pin Euro Connector Configuration**

PIN	SIGNAL	SPECIFICATION
1	Audio output	0.5Vrms/1kilohm or less
2	Audio input	0.5Vrms/10kilohm or more
3	Audio output	0.5Vrms/1kilohm or less
4	Earth ( audio )	
5	Earth ( B - input )	
6	Audio input	0.5Vrms/10kilohms or more
7	B - input	0.7Vp-p/75ohms
8	Function switching	9.5V to 12V
9	Earth ( G - input )	
10		
11	G - input	0.7Vp-p/75ohms
12		
13	Earth ( R - input )	
14	Earth ( blanking )	
15	R - input	0.7Vp-p/75ohms
16	Fast blanking	1V to 3V / 75ohms
17	Earth ( video )	
18	Earth ( fast blanking )	
19	Video output	1Vp-p / 75ohms
20	Video input	1Vp-p / 75ohms
21	Screening plug	

**4 pin connector [ ]**

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y ( S signal ) input	1V ± 3db 75ohm, positive Sync 0.3V
4	C ( S signal ) input	0.3V ± 3db 75ohm positive

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1. GENERAL</b>			<b>4. CIRCUIT ADJUSTMENTS</b>		
1-1. Switching On/Off .....	4		4-1. A Board Adjustment .....	18	
1-2. Presetting .....	4		4-2. B Board Adjustments .....	18	
1-3. Basic TV Operation .....	6		4-3. D Board Adjustments .....	18	
1-4. Advanced TV Operation .....	7		4-4. J1 Board Adjustments .....	19	
1-5. Teletext Operation .....	7		4-5. V Board Adjustment .....	19	
1-6. Operation Connections/Operations .....	8		4-6. Secondary Adjustments .....	20	
1-7. Additional Information .....	9				
<b>2. DISASSEMBLY</b>			<b>5. DIAGRAMS</b>		
2-1. Rear Cover Removal .....	11		5-1. Block Diagram .....	21	
2-2. Chassis Assembly Removal .....	11		5-2. Circuit Board Location .....	25	
2-3. A and J1 Boards Removal .....	12		5-3. Schematic Diagrams and Printed Wiring Boards .....	25	
2-4. B and V Boards Removal .....	12		5-4. Semiconductors .....	51	
2-5. Service Position .....	12				
2-6. Picture Tube Removal .....	13		<b>6. EXPLODED VIEWS</b>		
<b>3. SET-UP ADJUSTMENTS</b>			6-1. Chassis .....	53	
3-1. Beam Landing .....	14		6-2. Picture Tube .....	54	
3-2. Convergence .....	15				
3-3. Focus .....	17				
3-4. White Balance .....	17		<b>7. ELECTRICAL PARTS LIST</b> .....	55	

## SAFETY RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED WITH  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1 GENERAL

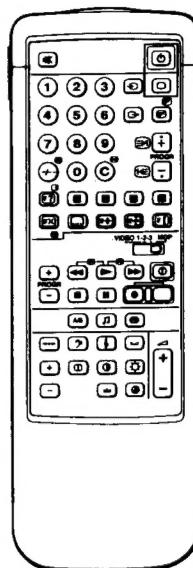
### 1-1. SWITCHING ON/OFF

After you have completed the basic preparation, your TV is ready to be connected to the mains power supply (220/240V AC, 50Hz).



#### How to turn the TV on

Action	Result
Press  on the TV.	The TV will turn on. <b>Note:</b> If the screen remains blank, the TV may be in the standby mode. Press  on the commander to switch it on.



#### How to turn the TV off

A Temporarily	
Press  to enter standby mode.	The TV will be in standby. To return to the TV mode press  .
B Completely	
Press  on the TV.	The TV will turn off.

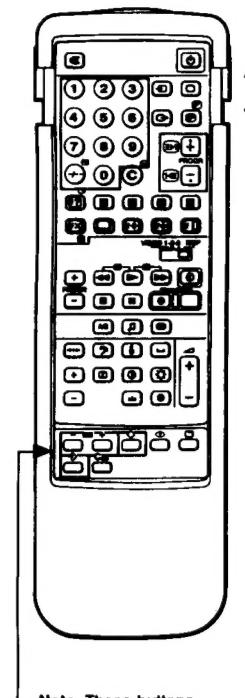
### 1-2. PRESETTING

Before viewing the TV programmes you need to preset TV channels. There are 60 spaces available for storing these channels.

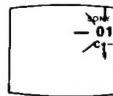
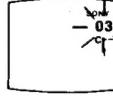
TV stations broadcast their channels at certain frequencies. You must preset these channels to programme numbers on the TV. If you are unfamiliar with the channel numbers of the stations you wish to preset, use "How to Preset Channels Automatically". If you are familiar with the channel numbers refer to "How to Preset TV Channels Directly".

Slide open the full function side of the Remote Commander to reveal preset buttons.

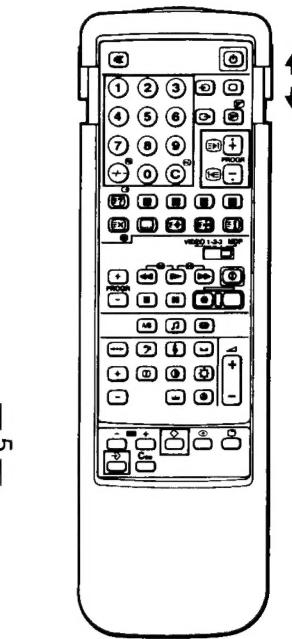
#### How to preset channels automatically



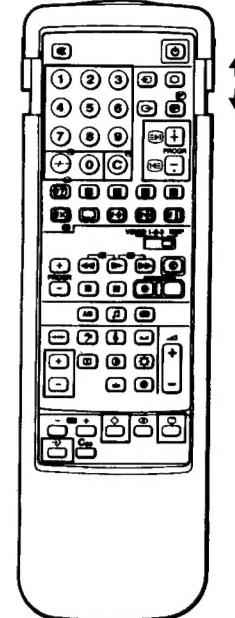
**Note:** These buttons should be used in preset mode only.

Action	Result
<b>1</b> Press  to enter the preset mode.	 The programme number will start flashing.
<b>2</b> Press PROGR +/- or the number buttons to select the programme number to which you want to preset a channel.	 The programme number changes
<b>3</b> Press  + or - once to search forward or backward for channels.	 When a channel is tuned in, the search will stop and the channel number will be displayed. <b>Note:</b> If you want to skip a channel, press  + or - again to restart the search.
<b>4</b> Press  if you want to store the channel which is tuned in. Press  to exit preset mode without storing.	 The channel is now stored and you have returned to TV mode.
<b>5</b> Repeat steps 1 to 4 to store the other channels.	

## How to preset TV channels directly



Action	Result
<b>1</b> Press  to enter the preset mode.	
<b>2</b> Press PROGR +/- or the number buttons to select the programme number on which you want to preset a channel.	
<b>Note</b> To select a double-digit number, use the  button. For example, if you want to choose 23, press , 2, and then 3.	
<b>3</b> Press C.	
<b>4</b> Select the channel number with two digits (e.g. 04) by pressing the number buttons.	
<b>Note</b> Press the second number within 5 seconds after the first one, otherwise the operation will be cancelled.	<b>Note</b> If you have made a mistake the letter "X" will appear. Repeat step 2 again.
<b>5</b> Press  to store the channel which is tuned in. Press  to exit the preset mode without storing.	
<b>6</b> Repeat steps 1 to 5 to store the other channels.	



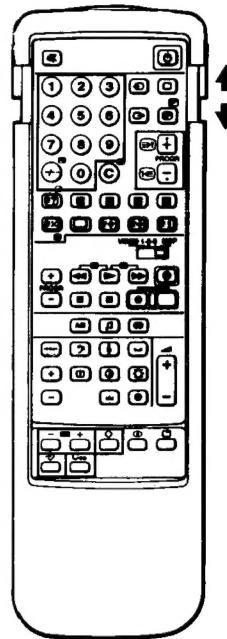
You can use up to five characters to "name" a channel or station (e.g. BBC1).

Action	Result
<b>1</b> Select a programme number you want to name by pressing the PROGR +/- or the number buttons.	
<b>2</b> Press .	
<b>3</b> Press C.	
<b>4</b> Press + or - repeatedly to select a letter in the alphabet, a number, or a blank space.	
<b>5</b> Press C.	
<b>6</b> Repeat steps 4 and 5 to set each letter or number.	
<b>7</b> Press .	

## How to tune in a channel temporarily

You can tune a channel in temporarily, if it has not been preset.

Action	Result
<b>1</b> Press C. For cable channels, press C twice.	The indication "C" appears on the screen.
<b>2</b> Select the channel number with two digits by pressing the number buttons (e.g. for channel 4, first press 0, then 4.)	The channel is received, but it is not stored to any programme number.



Using the PROGR +/- buttons you can skip unused programme channel numbers. However, the skipped numbers may still be called up using the number buttons.

Action	Result
1 Press $\rightarrow$ to enter the preset mode.	The programme number will start flashing.
2 Select the programme number that you want to skip by pressing PROGR +/- or the number buttons.	The programme number changes.
3 Press Coo.	The lowest channel number appears under the programme number.
4 Press $\diamond$ .	The channel is now stored and you have returned to TV mode.
5 Repeat steps 1 to 4 to skip other programme numbers.	

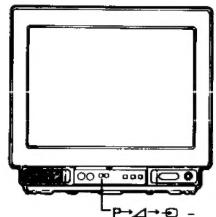
#### How to Fine Tune Manually

If the picture is distorted, you can fine tune the channel manually.

Action	Result
Press $\text{BB}$ +/- repeatedly until the picture looks normal.	The indication $\leftarrow$ F $\rightarrow$ appears on the screen.
Press $\rightarrow$ to enter the preset mode.	The programme number starts flashing.
Press $\diamond$ .	The fine tuning is stored.

## 1-3. BASIC TV OPERATION

Note: Press  $\downarrow$  on door to open.

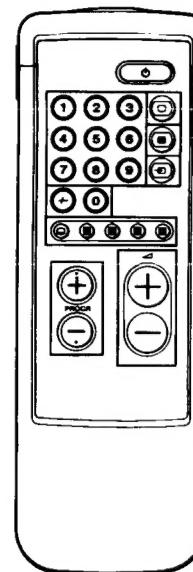


This section introduces you to the basic control functions which are available on the simple side of the remote commander.

#### How to Select Programmes

Before you can select programmes make sure that you have preset channels, (refer to pages 5 and 6).

Action	Result
Press PROGR +/- or the number buttons. To select a double-digit number, use the $\rightarrow$ button. For example, if you want to choose 23, press $\rightarrow$ , 2, and then 3.	The selected programme is displayed.



#### How to Adjust the Volume

Action	Result
Press $\triangle$ +/-.	The volume markers will appear and are adjusted accordingly.

#### How to Use Additional Functions

##### How to operate with the buttons on the TV

You can also select programmes and adjust the volume using the  $P\rightarrow\triangle\rightarrow\diamond$  and  $\rightarrow\leftarrow$  +/- buttons on the front of the TV. For operation, first press the  $P\rightarrow\triangle\rightarrow\diamond$  button repeatedly so that the P (for programme) or  $\triangle$  (for volume) indication appears on the screen, and then adjust with the  $\rightarrow\leftarrow$  +/- buttons.

Note: To restore factory set level press  $\rightarrow\leftarrow$  +/- together.

##### Basic teletext operation

Select:

The  $\text{B}$  button to view teletext.

The  $\text{O}$  button to request subtitles (p.888).

The  $\text{C}$  button to return to TV mode.

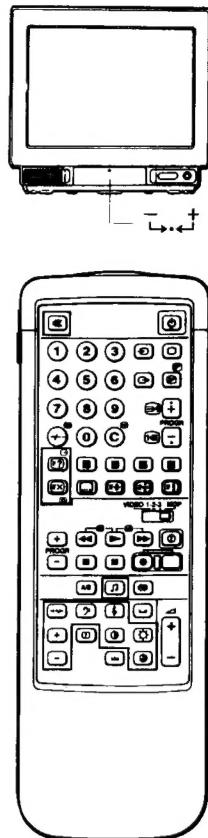
For details about teletext operation, refer to page 12.

##### How to view the video input picture

Press  $\text{C}$ . To return to the TV mode, press  $\text{C}$ . For further details, refer to page 15.

## 1-4. ADVANCED TV OPERATION

This section shows you how to use convenient features, to adjust the picture and sound to your taste, enter a name for a channel to be displayed on the screen, and fine tune a channel. Use the full-function side of the Remote Commander.



### How to use on-screen display and special sound features

You can enjoy the following convenient features.

How to	Action	To resume normal picture/sound
Display on-screen indications	Press	Indications disappear after 5 seconds.
Display programme number	Press  twice.	Press  twice again.
Mute the sound	Press .	Press  again.
Set the sound to music listening position	Press .	Press  again.
Request the time	Press .	Press  again.

### How to adjust the picture and sound

Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps.

To Adjust:	Press:	Then:	Result: (- ← → +)
<b>Picture:</b>			
Colour Intensity			Less ← More
Picture Contrast			Less ← More
Brightness			Dark ← Bright
<b>Sound:</b>			
Base			Less ← More
Treble			Less ← More

To reset the picture and sound to factory set levels press .

#### On the set:

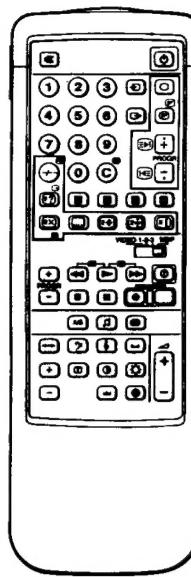
Press +/ - buttons simultaneously.

#### Note:

Some of the functions on the remote commander are not available for use with this TV set.

## 1-5. TELETEXT OPERATION

TV stations broadcast teletext programmes via the TV channels. To use the full teletext features, use the buttons indicated in green on the full function side of the Remote Commander.



### How to View the Teletext

Action	Result
<b>1</b> Select the channel which carries the teletext service you wish to see.	The channel changes on the screen.
<b>2</b> Press .	If the teletext signal is not broadcast, then  is displayed.
<b>3</b> Input three digits for the page number using the number buttons. <b>Note</b> If you make a mistake, type in any three digits, then re-enter the correct page number.	The numbers are entered on the screen. The requested page will appear in a few seconds.

**To return to the TV mode.**  
Press .

**To change the teletext channels**  
First press to return to the TV mode, then repeat steps 1 to 3.

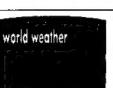
#### Note

If the signal of the TV channel is weak, teletext errors may often occur.

### How to Use the Advanced Features of Teletext

How to	Action	Result (On-screen display)
Request the index page.	Press .	The index page appears.
Request the subtitle page (p888).	Press .	The subtitle page is displayed (p888).
Access the next or preceding page.	Press  (PAGE +) or  (PAGE -).	The next or preceding page appears.

## 1-6. OPERATION CONNECTIONS/OPERATIONS

How to	Action	Result
Superimpose the teletext display on the TV programme.	Press <b>TEXT</b> once if you are in text mode, or press <b>TEXT</b> twice if in TV mode. To return to the normal teletext display press <b>TEXT</b> again.	 The teletext displays are superimposed on the TV programmes.
Prevent a teletext page from being updated or changed.	Press <b>TEXT</b> (HOLD).  To resume normal teletext reception, press <b>TEXT</b> .	 The HOLD symbol ( <b>TEXT</b> ) appears on the screen and the chosen sub-page is held until you cancel.
Enlarge the teletext display.	Press <b>TEXT</b> once to enlarge the upper half. Press twice to enlarge the lower half.  Press again to restore the normal display.	 The upper half is enlarged.
Reveal concealed information (e.g. answers to a quiz).	Press <b>TEXT</b> (REVEAL).  Press again to conceal the information.	 The information is revealed.
Watch the TV programme while waiting for a requested page to be displayed.	1. Request a new page.  2. Press <b>TEXT</b> (TEXT CL).  3. When the requested page has been captured, the page number remains and the other data disappears.  4. Press <b>TEXT</b> to view this page.	 The numbers are entered.  The TV program is displayed, and the requested page number and other teletext data appear at the top of the screen.  The requested page is displayed.

Some of the features may not be available depending on the Teletext service.

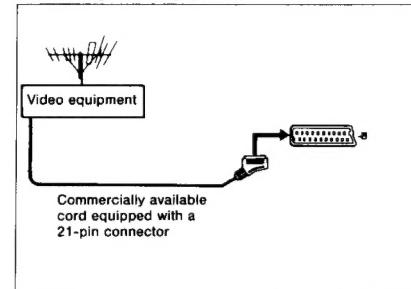
You can connect video equipment such as VTRs and video disc players to the TV.

### How to connect video equipment to the TV

This TV has 2 different input connectors and 1 output signal.

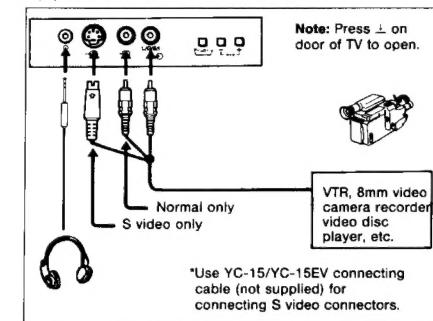
Connector	Acceptable input signal	Available output signal
1. <b>AV</b>	Normal audio/video and RGB signal	Audio/video from TV tuner
2. <b>AV</b> on the front	Normal audio/video and S video signal	No outputs

### Connecting video equipment

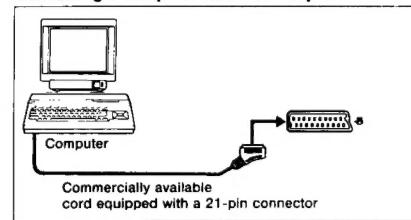


### Connecting video equipment temporarily

It is convenient to use the front connectors when connecting equipment such as a video camera recorder.



### Connecting a computer with RGB output



**To connect a VTR using the **TR** terminal**  
Connect the aerial output of the VTR to the aerial terminal **TR** of the TV.

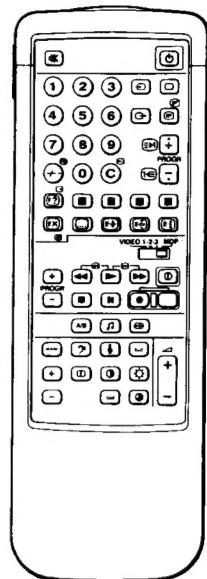
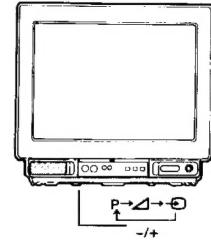
#### Note

If you connect your VTR to the aerial terminal of the TV, it is recommended that programme number 0 is used to tune in the video signal.

#### S video input (Y/C input)

Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Separating the Y and C signals prevents them from interfering with one another, and therefore improves picture quality (especially luminance). This TV is equipped with S video input through which these separated signals can be input directly.

**If the picture or the sound is distorted**  
Move the VTR away from the TV.



### How to view the video input picture

You can view the picture of video equipment connected to the input terminals by selecting the input mode.

#### Operation

Action	Result
Press $\square$ repeatedly to select the desired input.	Symbol for the selected input appears. (See the table below.)

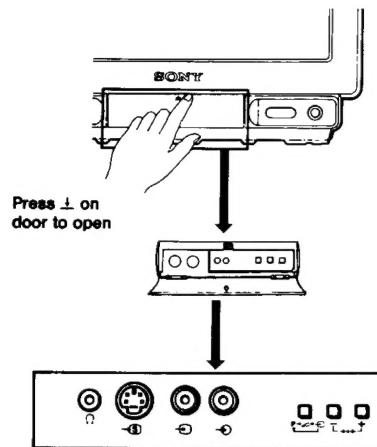
To return to the TV mode, press the  $\square$  button.

#### Input modes

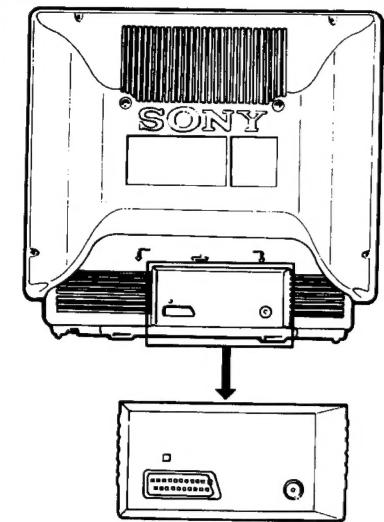
Symbol	Result
$\square 1$	Audio/video input through the $\square$ connector.
$\square 2$	RGB input through the $\square$ connector.
$\square 3$	Audio/video input through $\square$ and $\square$ jacks on the front.
$\square 3$	S video input through the $\square$ connectors on the front (4-pin connector).

You can also select the input mode using the  $P \rightarrow \square \rightarrow \square$  button on the TV. In this case, first select  $\square$  and then press +/- buttons to select the input.

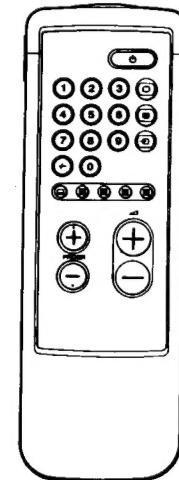
A



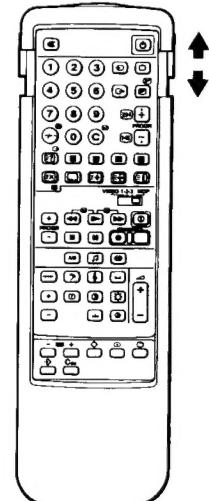
B



C



D



This section briefly describes the buttons and controls on the TV set and on the Remote Commander.  
For more information, refer to the pages given next to each description.

<b>A TV set – Front</b>	
Sign	Name
①	Main power switch
④	Standby indicator
Ω	Headphones jack (stereo minijack)
— S —	Input jacks (S-video/video/audio)
P → □ → C	Function selector (Programme/volume/input)
— + —	Adjustment buttons for function selector

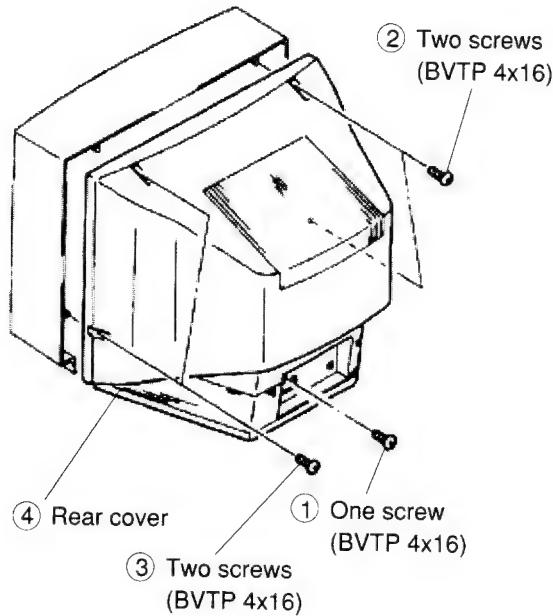
<b>B TV set – Rear</b>	
Sign	Name
—	21-pin Euro-AV connector (RGB/video input, TV output)
— T —	Aerial terminal (IEC type)

<b>C Remote Commander – simple side</b>	
Sign	Name
— C —	Input mode selector
— T —	Teletext button
— F —	Fastext buttons
— O —	TV mode selector
④	Standby button
1,2,3,4,5, 6,7,8,9, and 0	Number buttons
— / —	Double-digit entering button
— V —	Volume control button
PROG +/—	Programme selector

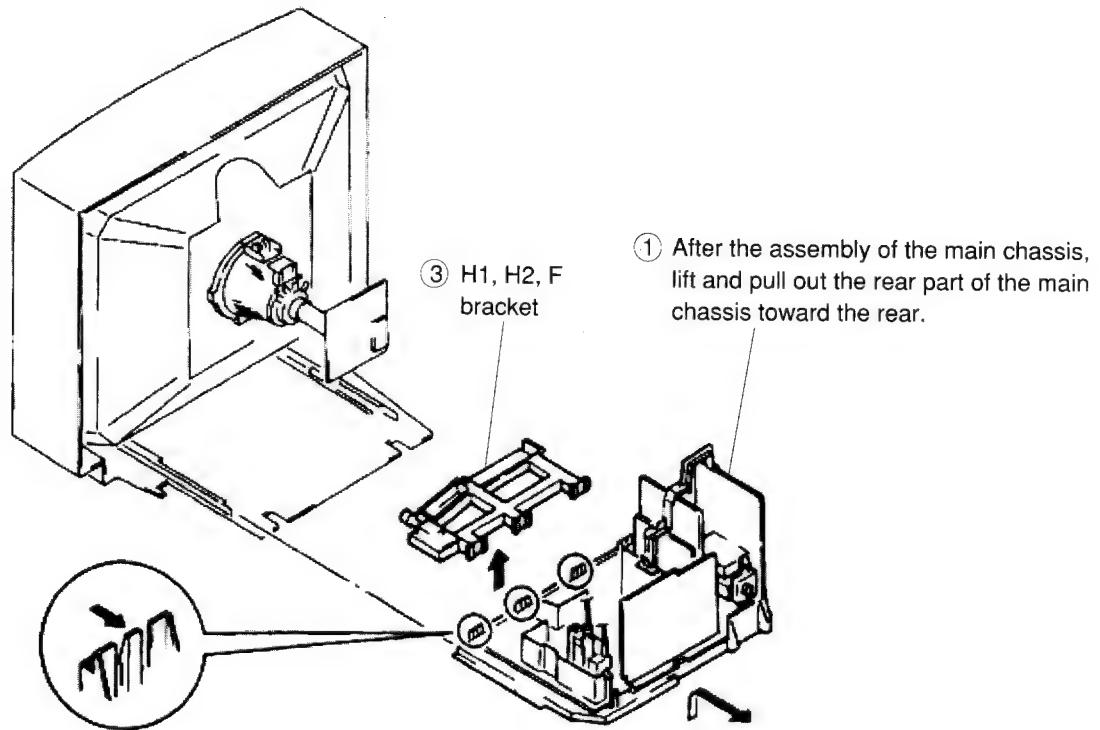
<b>D Remote Commander – full function side</b>	
Sign	Name
— X —	Mute on/off button
④	Standby button
1,2,3,4,5, 6,7,8,9, and 0	Number buttons
— C —	Input mode selector
— O —	TV power on/TV mode selector button
— T —	Teletext button
— M —	Music button
— / —	Double-digit entering button
C	Direct channel entering button
— S —	Request time display
— F —	Teletext operation buttons
— B —	Fastext buttons
— D —	On-screen display button
— P —	Picture and sound adjustment reset button
— V —	Volume control
PROG +/—	Programme selector
— P —	Picture and sound controls
— V —	Video equipment selector
— B —	Video equipment operation buttons
Coo	Programme number clear button
— G —	Channel preset button
— T — +	Tuning buttons
— S —	Channel store button
— O —	Station label button

## SECTION 2 DISASSEMBLY

### 2-1. REAR COVER REMOVAL

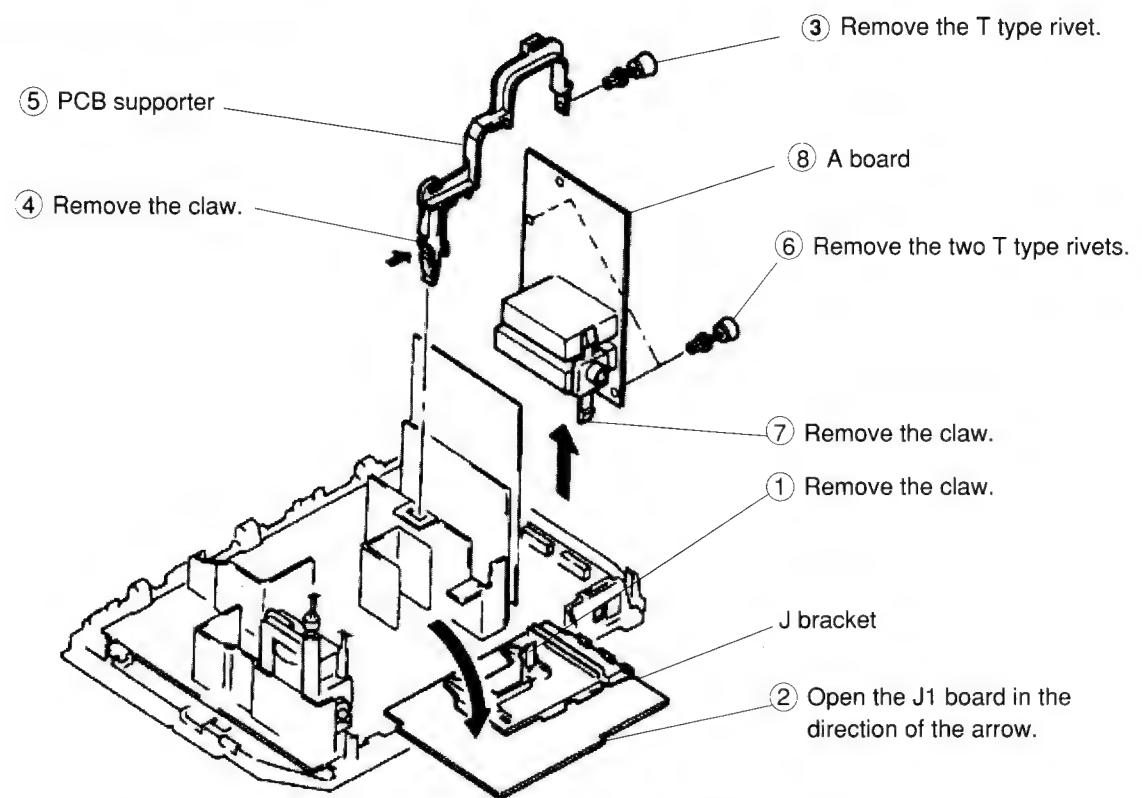


### 2-2. CHASSIS ASSEMBLY REMOVAL

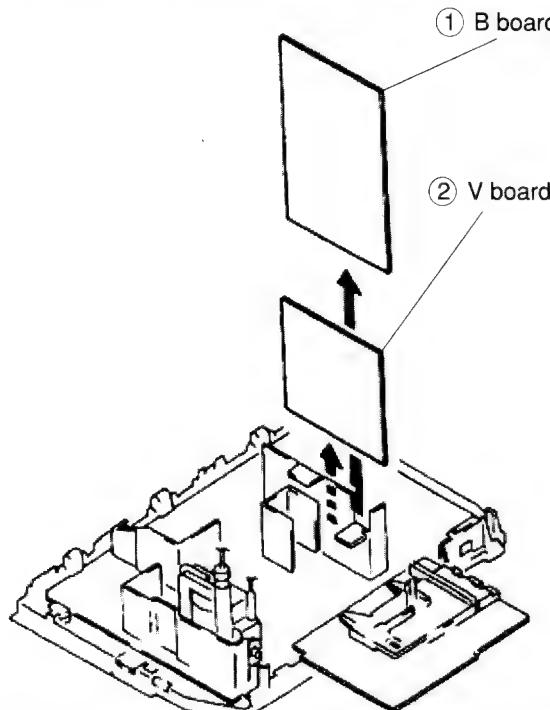


(2) Push the three claws of the main chassis in the direction of the arrow and remove the H1, H2, F bracket upwards.

### 2-3. A AND J1 BOARDS REMOVAL

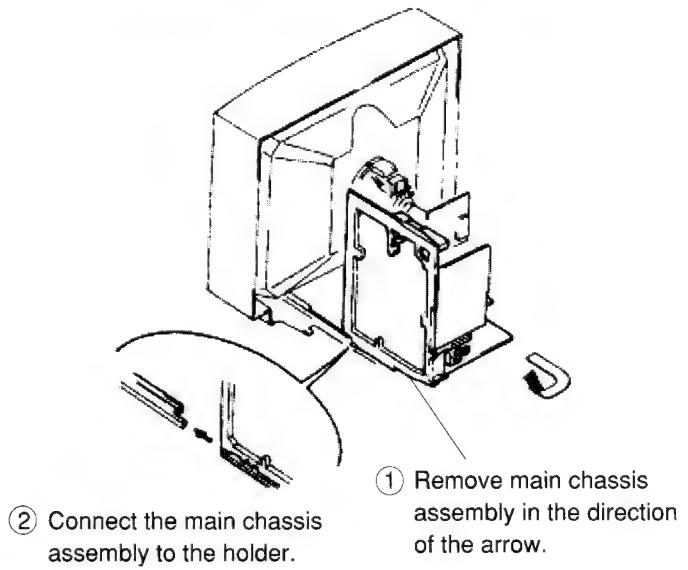


### 2-4. B AND V BOARDS REMOVAL



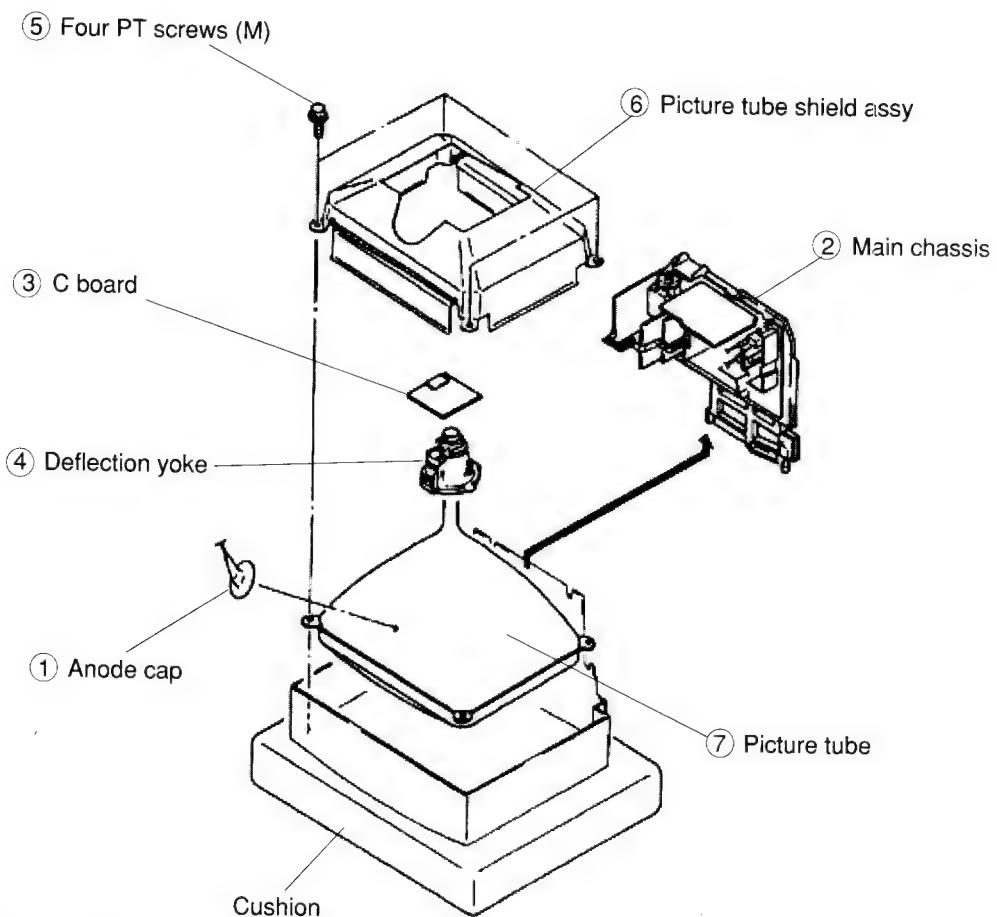
### 2-5. SERVICE POSITION

\* Remove the H1, H2, F bracket from the main chassis assembly and then perform the following servicing.  
(Refer to 2-2. CHASSIS ASSEMBLY REMOVAL.)



Note: 10 pin extension cable (S-0945-001-0)

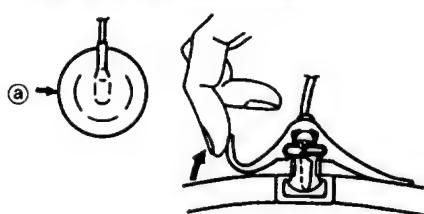
## 2-6. PICTURE TUBE REMOVAL



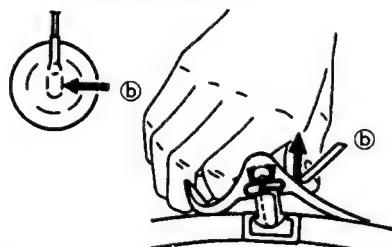
### • REMOVAL OF ANODE-CAP

**Note:** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

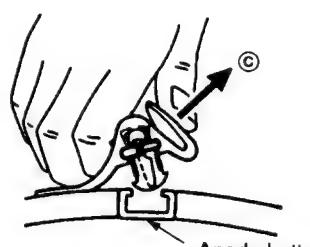
### • REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ④.



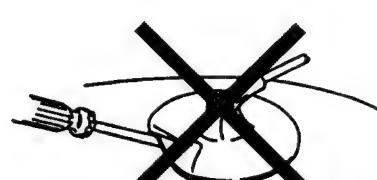
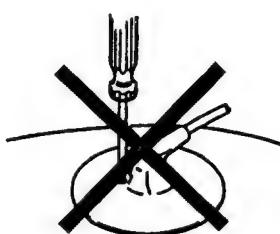
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⑤.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⑥.

### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or hurt the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way :
  - Contrast ..... 80%  
(or remote control normal)
  - Brightness ..... 50%

- Carry out the following adjustments in this order:

- Beam landing
- Convergence
- Focus
- White balance

Note: Testing equipment required

- Colour bar/pattern generator
- Degausser
- DC power supply
- Digital multimeter
- Oscilloscope

#### Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

- Input the white signal with the pattern generator.
- Contrast [ ] normal  
Brightness [ ]
- Position neck ass'y as shown in Fig. 3-2.
- Set the pattern generator raster signal to red.
- Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.  
(see Fig. 3-1 through 3-3.)
- Move the deflection yoke forward and adjust so that entire screen is red. (See Fig. 3-1.)
- Switch the raster signal to blue, then to green and verify the condition.
- When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- If the beam does not land correctly in all the corners, use a magnet to adjust it.  
(See Fig. 3-4.)

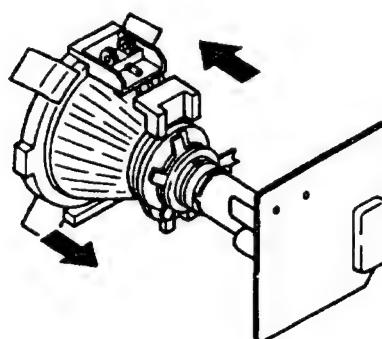


Fig. 3-1

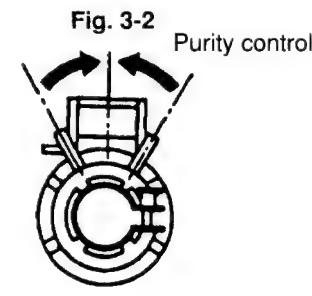


Fig. 3-2

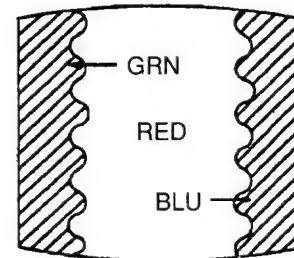


Fig. 3-3

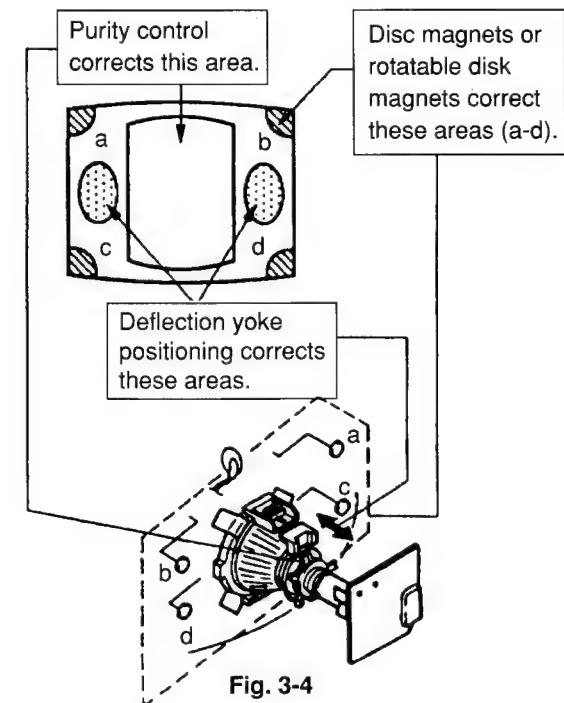


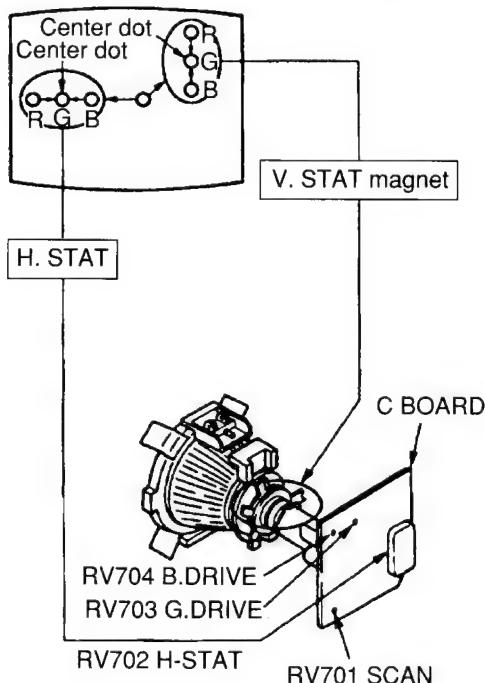
Fig. 3-4

### 3-2. CONVERGENCE

#### Preparation :

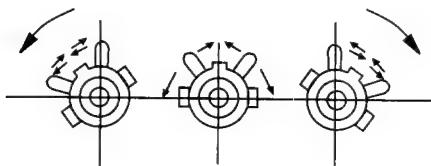
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

#### (1) Horizontal and vertical static convergence

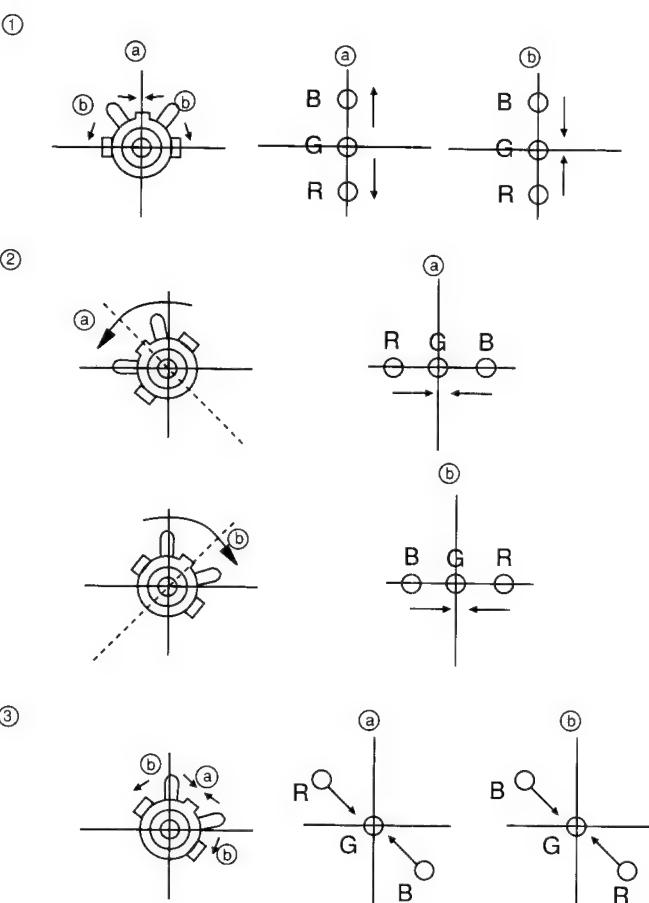


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other.)

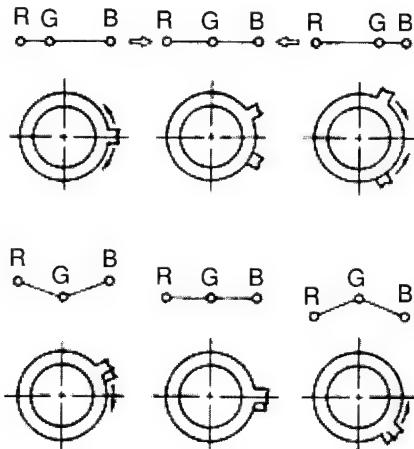
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



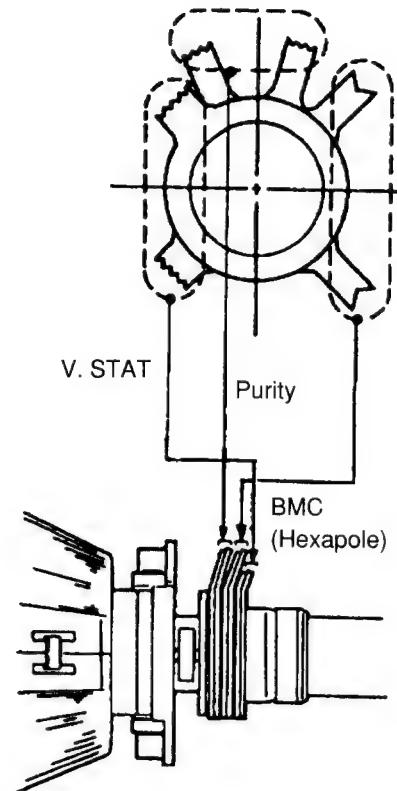
4. If the V.STAT magnet is moved in the direction of the ①(a) and ①(b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking. Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



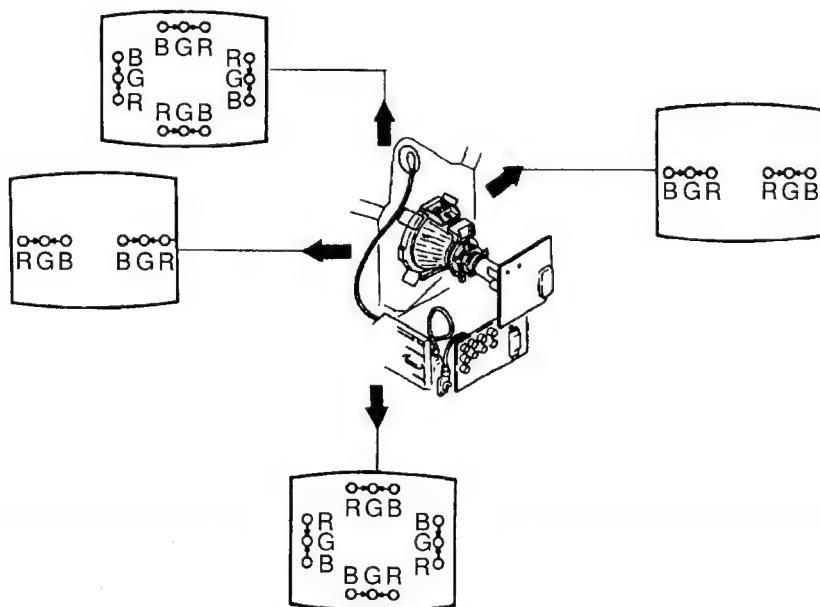
## (2) Dynamic convergence adjustment

### Preparations:

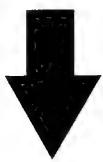
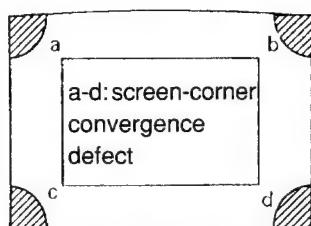
Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.

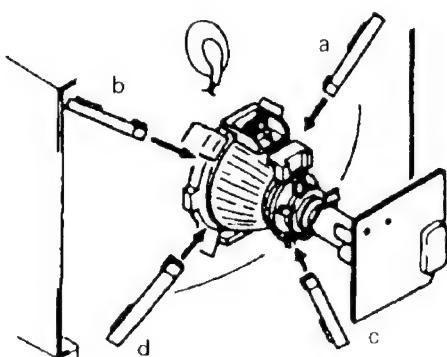
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



**(3) Screen corner convergence**



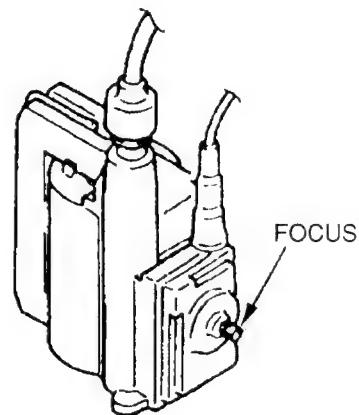
Install the permalloy assembly for the section with faulty.



Parmalloy ass'y, correction.

**3-3. FOCUS**

Adjust the focus to optimize the screen.



**3-4. WHITE BALANCE**

**SCREEN G2 SETTING**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

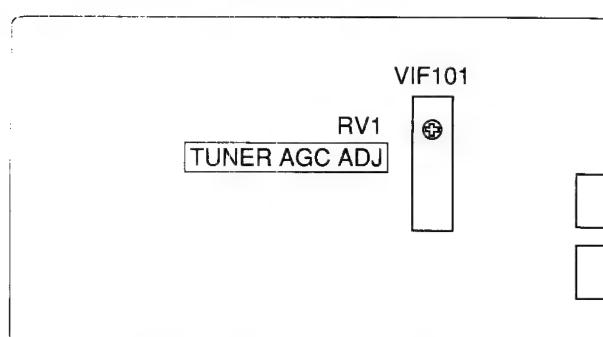
**WHITE BALANCE ADJUSTMENT**

1. Input an all-white signal from the pattern generator.
2. Set the picture brightness and color controls to their normal levels.
3. Use RV704 (B Drive) and RV703 (G Drive) to adjust white balance.

In the adjustments below, have the picture color and brightness settings at their normal levels unless there is a specific instruction to the contrary.

## SECTION 4 CIRCUIT ADJUSTMENTS

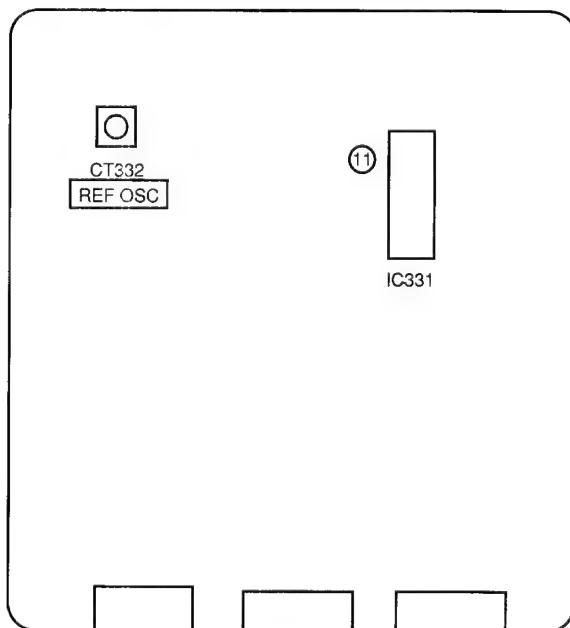
### 4-1. A BOARD ADJUSTMENT



#### TUNER AGC ADJUSTMENT (VIF101, RV1)

1. Align with an appropriate signal between stations.
2. Adjust RV1 so that snow noise and cross modulation just disappear from the picture.

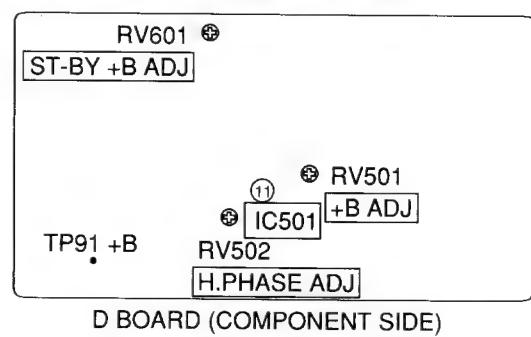
### 4-2. B BOARD ADJUSTMENTS



#### REFERENCE OSCILLATOR ADJUSTMENT (CT332 8.8MHz)

1. Input a PAL colour bar signal.
2. Ground pin (11) of the IC331.
3. Adjust CT332 to obtain synchronization.

### 4-3. D BOARD ADJUSTMENTS



#### +B ADJUSTMENT (RV501)

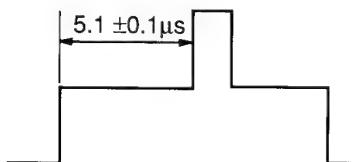
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain  $135 \pm 0.2V$ .

#### ST-BY +B ADJUSTMENT (RV601)

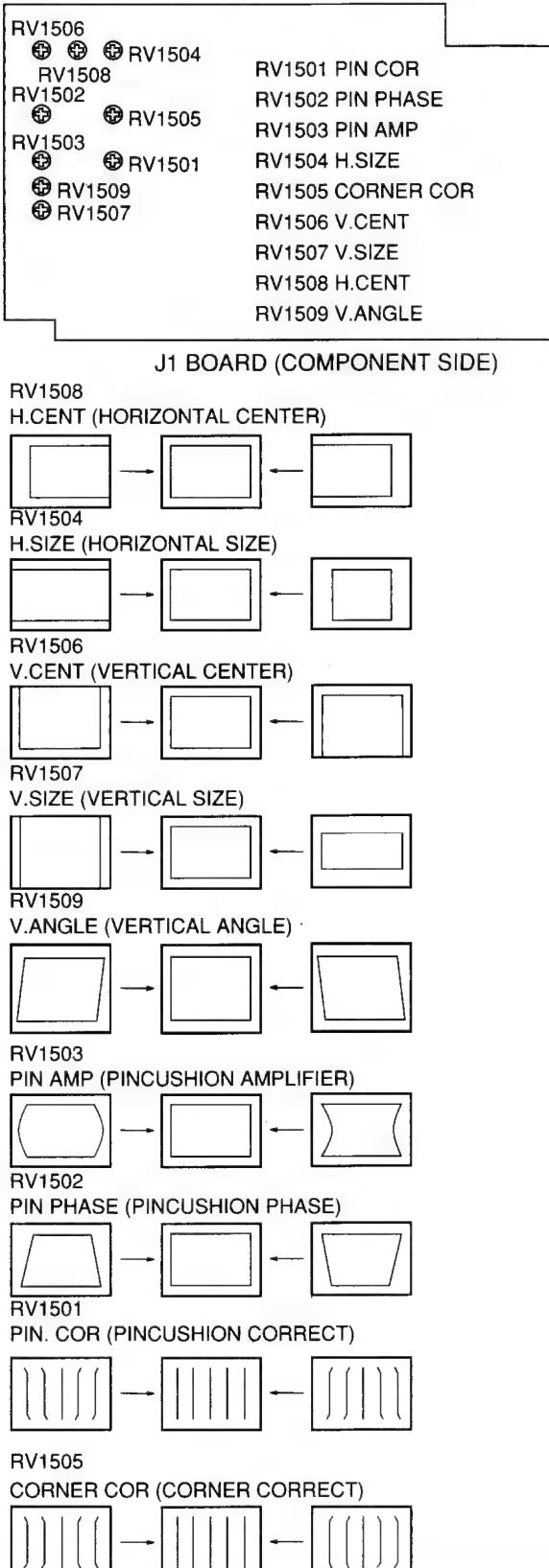
1. Put the system into  $\mathbb{U}$  standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain  $135 \pm 3V$ .
4. Take the system out of  $\mathbb{U}$  standby mode (remote commander).

#### H.PHASE ADJUSTMENT (RV502)

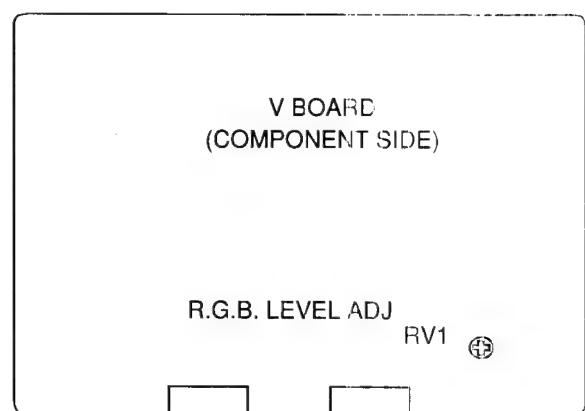
1. Input a PAL colour bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin (11) (SCP) of IC501.
5. Rotate RV502 to adjust to  $5.1 \pm 0.1 \mu s$ .



#### 4-4. J1 BOARD ADJUSTMENTS



#### 4-5. V BOARD ADJUSTMENT



##### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

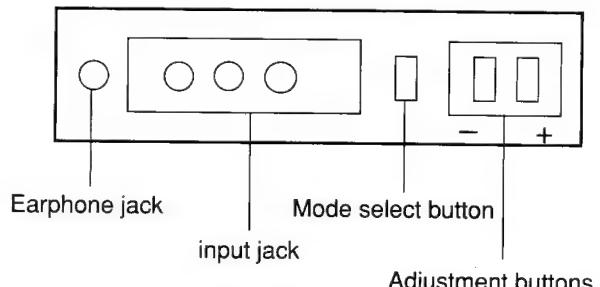
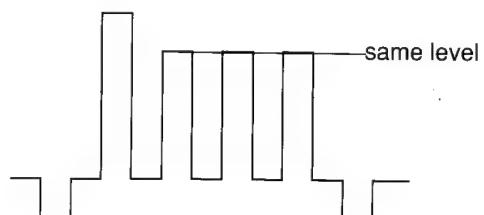
## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

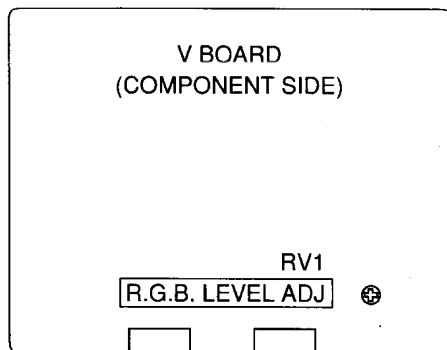
1. Set the system to receive a test pattern.
2. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the  $\odot$  contrast setting.
6. Adjust the  $\otimes$  brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)  
If there is no test colour pattern
  1. Set the system to receive a colour pattern.
  2. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.
  - Set the  $\odot$  colour to its normal state.
  - 3-5. Steps are the same as above.
  6. Since 20 IRE is nearly blue, adjust the  $\otimes$  brightness control so that the blue barely glows.
  7. Same as step 7 above.
  8. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.

### SUB COLOUR ADJUSTMENT

1. Set the system to receive colour bars.
2. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the colour control so that the B out waveform (pin 5 of C board connector CNC72) is as shown in the figure below.
6. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)



## 4-5. V BOARD ADJUSTMENT

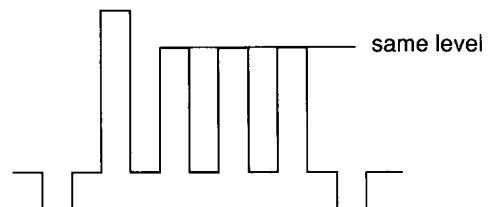


### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

### SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press  $\rightarrow$   $\leftarrow$  on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin 5) of C board connector CNC72) is as shown in the figure below.
6. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)

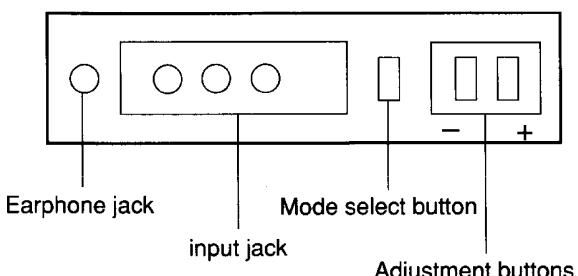


## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

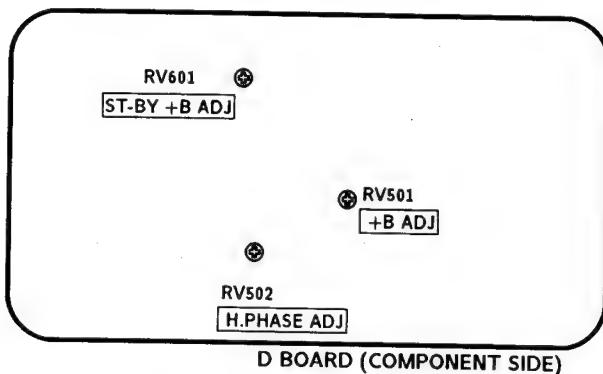
1. Set the system to receive a test pattern.
2. Press  $\rightarrow$   $\leftarrow$  on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the  $\odot$  contrast setting.
6. Adjust the  $\ast$  brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern



1. Set the system to receive a color pattern.
2. Press  $\rightarrow$   $\leftarrow$  on the remote commander to put the system into normal mode.
3. Set the  $\odot$  color to its normal state.
- 4-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the  $\ast$  brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press  $\rightarrow$   $\leftarrow$  on the remote commander to put the system into normal mode.

### 4-3. D BOARD ADJUSTMENTS



#### +B ADJUSTMENT (RV501)

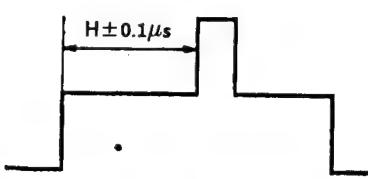
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain  $135 \pm 0.2V$ .

#### ST-BY +B ADJUSTMENT (RV601)

1. Put the system into  $\odot$  standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain  $135 \pm 3V$ .
4. Take the system out of  $\odot$  standby mode (remote commander).

#### H.PHASE ADJUSTMENT (RV502)

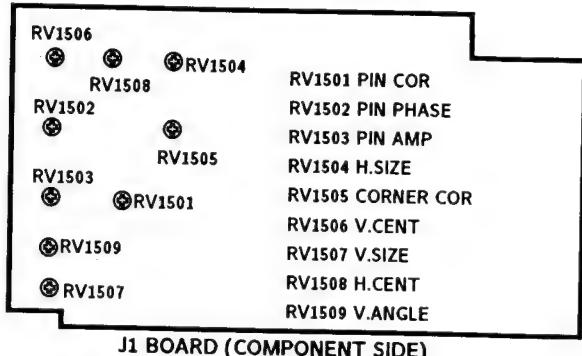
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin 11 (SCP) of IC 501.
5. Rotate RV502 to adjust to  $H \pm 0.1\mu s$ .



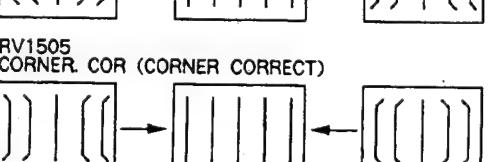
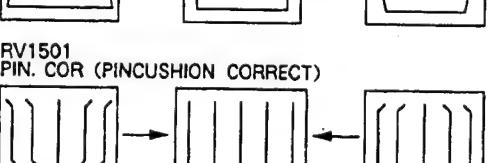
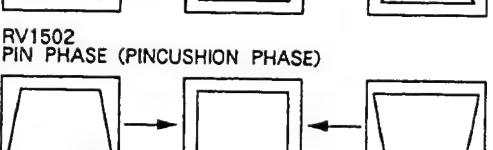
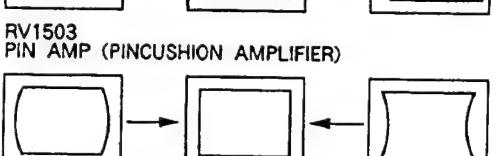
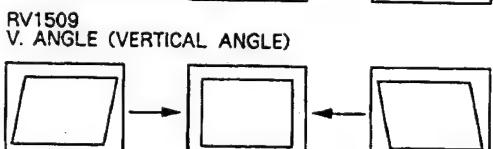
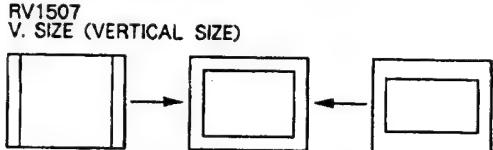
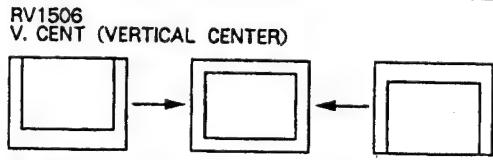
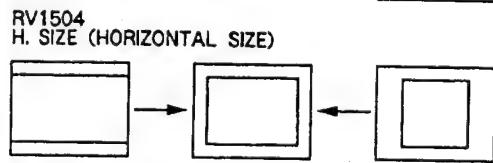
Standard of H. PHASE

Model Size	H
25 "	$5.1\mu s$
29 "	$5.5\mu s$

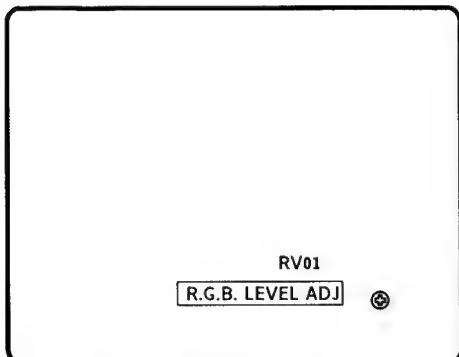
### 4-4. J1 BOARD ADJUSTMENTS



J1 BOARD (COMPONENT SIDE)  
RV1508  
H. CENT (HORIZONTAL CENTER)



## 4-5. V BOARD ADJUSTMENTS



V BOARD (COMPONENT SIDE)

### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

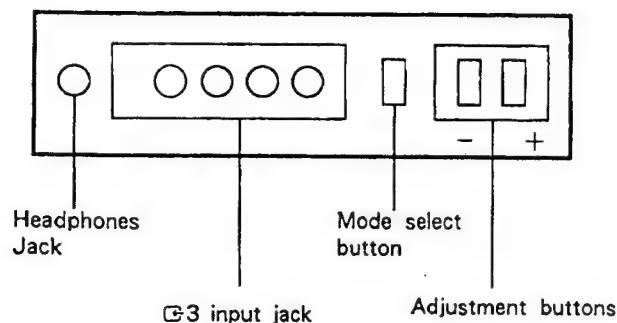
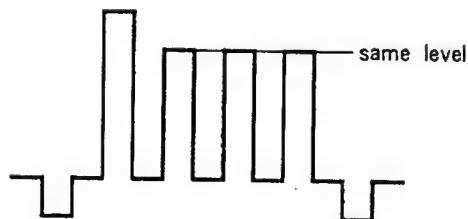
## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

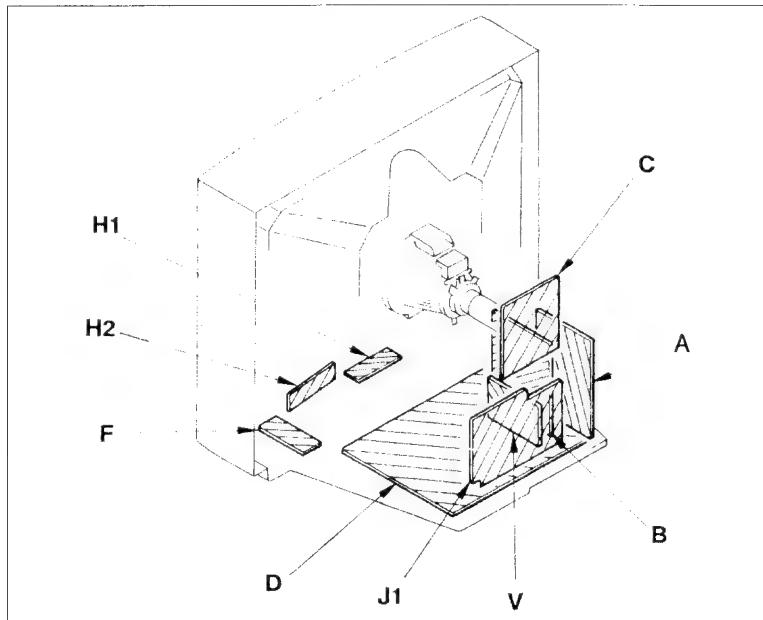
1. Set the system to receive a test pattern.
2. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the  $\odot$  contrast setting.
6. Adjust the  $\odot$  brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the  $\diamond$  (store) button of the remote commander.  
(SUB mode is released)  
If there is no test color pattern
  1. Set the system to receive a color pattern.
  2. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.  
Set the  $\odot$  color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the  $\odot$  brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press  $\rightarrow \cdot \leftarrow$  on the remote commander to put the system into normal mode.

### **SUB COLOR ADJUSTMENT**

1. Set the system to receive color bars.
2. Press  $\rightarrow$   $\leftarrow$  on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the  $\diamond$  (store) button of the remote commander. (SUB mode is released)



## 5-2. CIRCUIT BOARD LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS - Conductor Side -

## Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $\text{k}\Omega = 1000\Omega$  ,  $\text{M}\Omega = 1000\text{K}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm  
 Rating electrical power  $\frac{1}{4}$  W

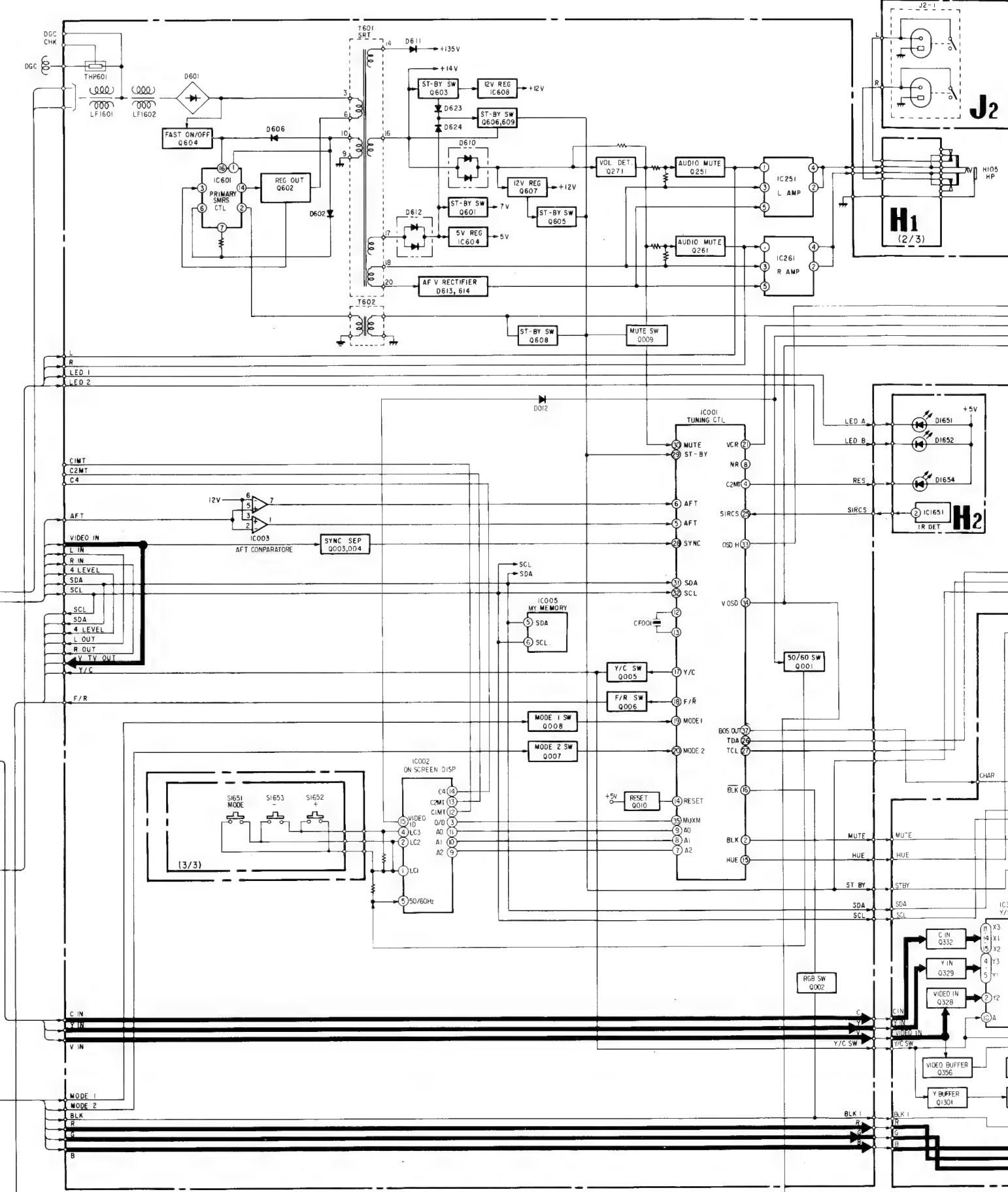
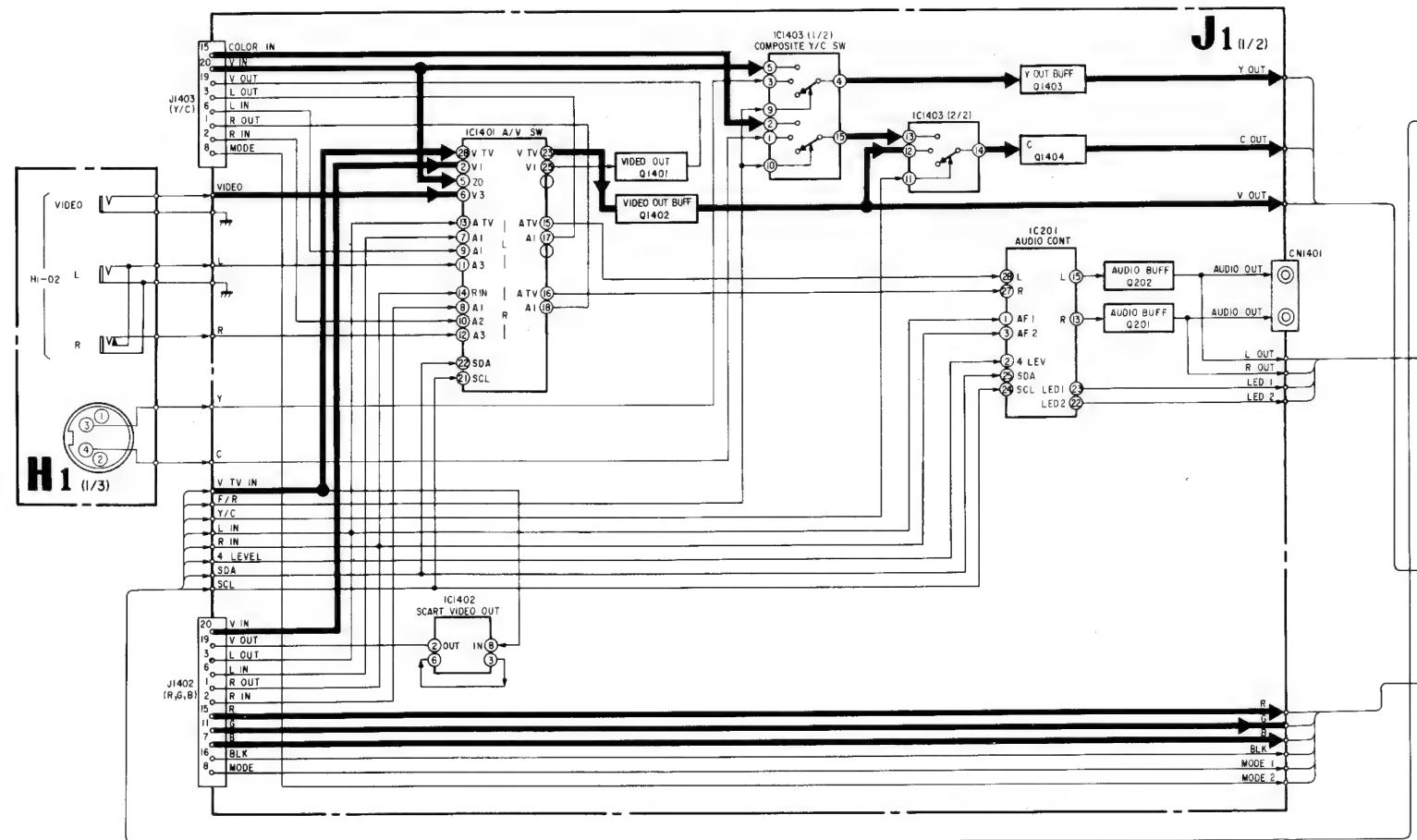
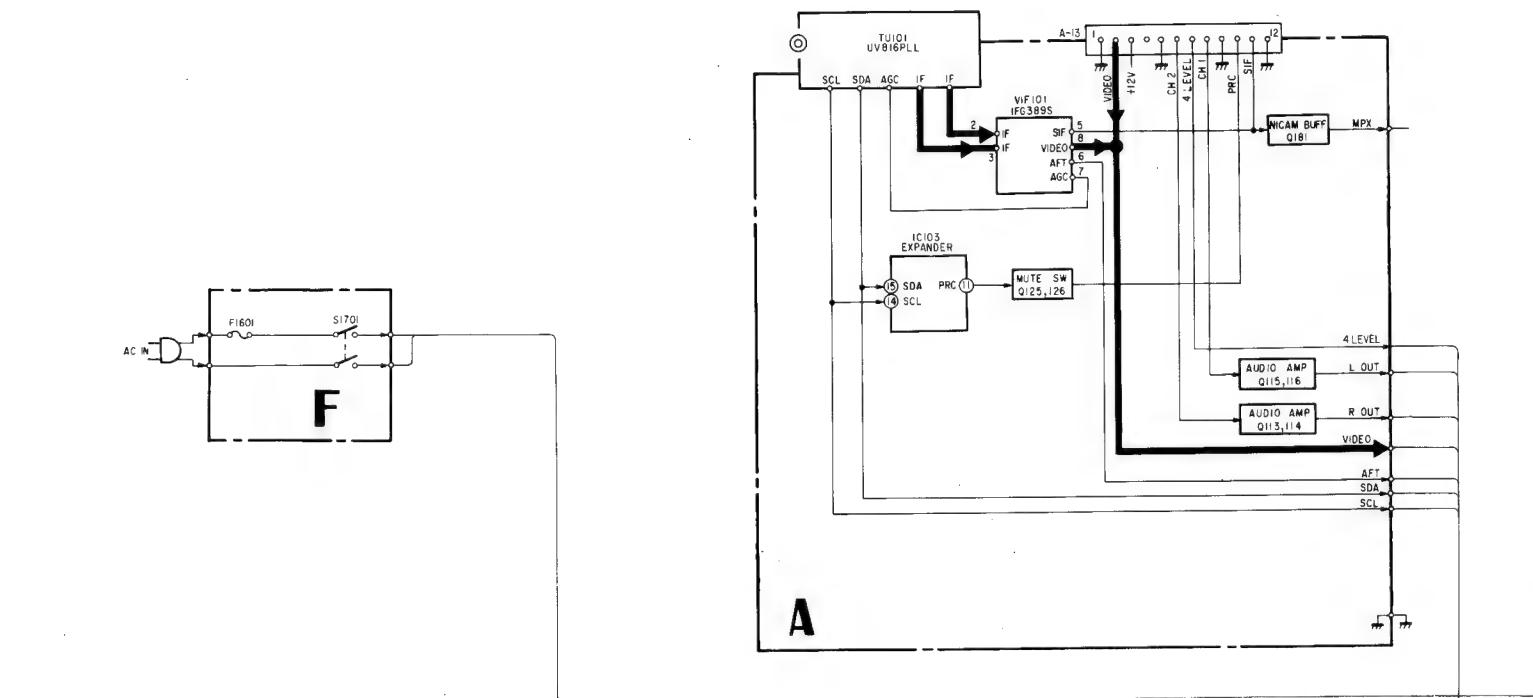
- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth - ground.
- : earth - chassis.
- : no mounted.
- Readings are taken with a colour-bar signal input
- Readings are taken with  $10\text{M}\Omega$  digital multimeter
- Voltages are dc with respect to ground unless otherwise noted
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circle numbers are waveform references.
- : B - bus.
- : signal path (RF)

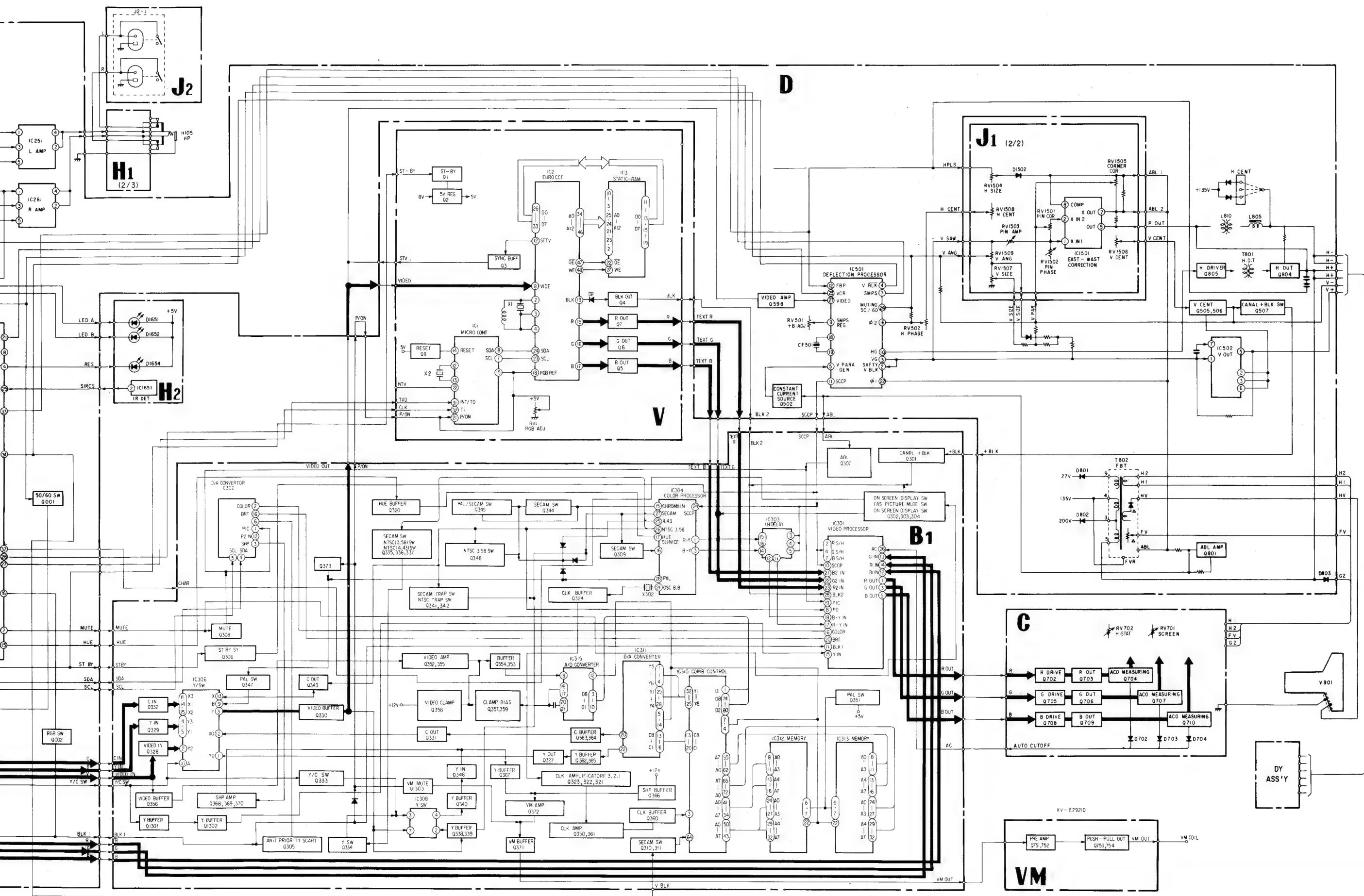
Reference information		
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: LF-8L	ADJUSTABLE RESISTOR
CAPACITOR	: TA	MICRO INDUCTOR
	: PS	TANTALUM
	: PP	STYROL
	: PT	POLYPROPYLENE
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

**Note :** The components identified by shading and marked are critical for safety. Replace only with part number specified.

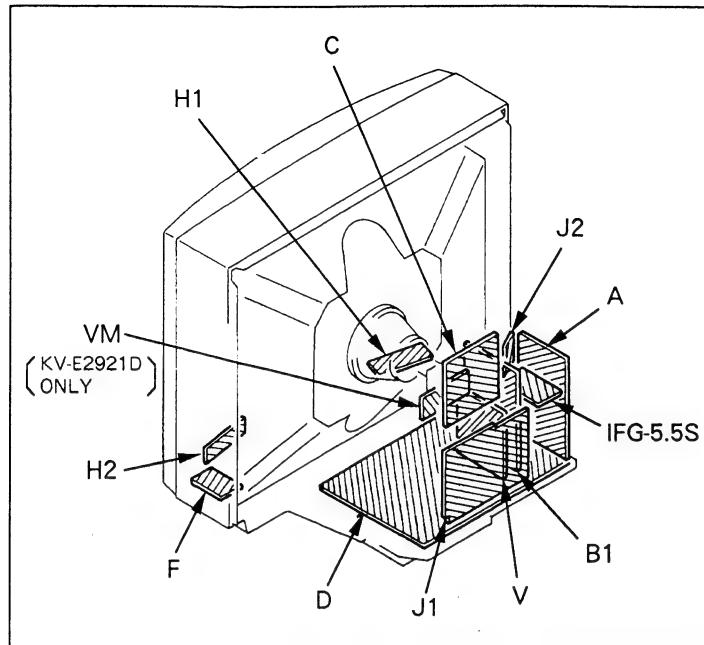
## SECTION 5 DIAGRAMS

### 5-1. BLOCK DIAGRAM (1)





## 5-2. CIRCUIT BOARDS LOCATION



### Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

## 5-3. SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

### Note :

- All capacitors are in  $\mu$ F unless otherwise noted.
- PF :  $\mu\mu$ F 50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

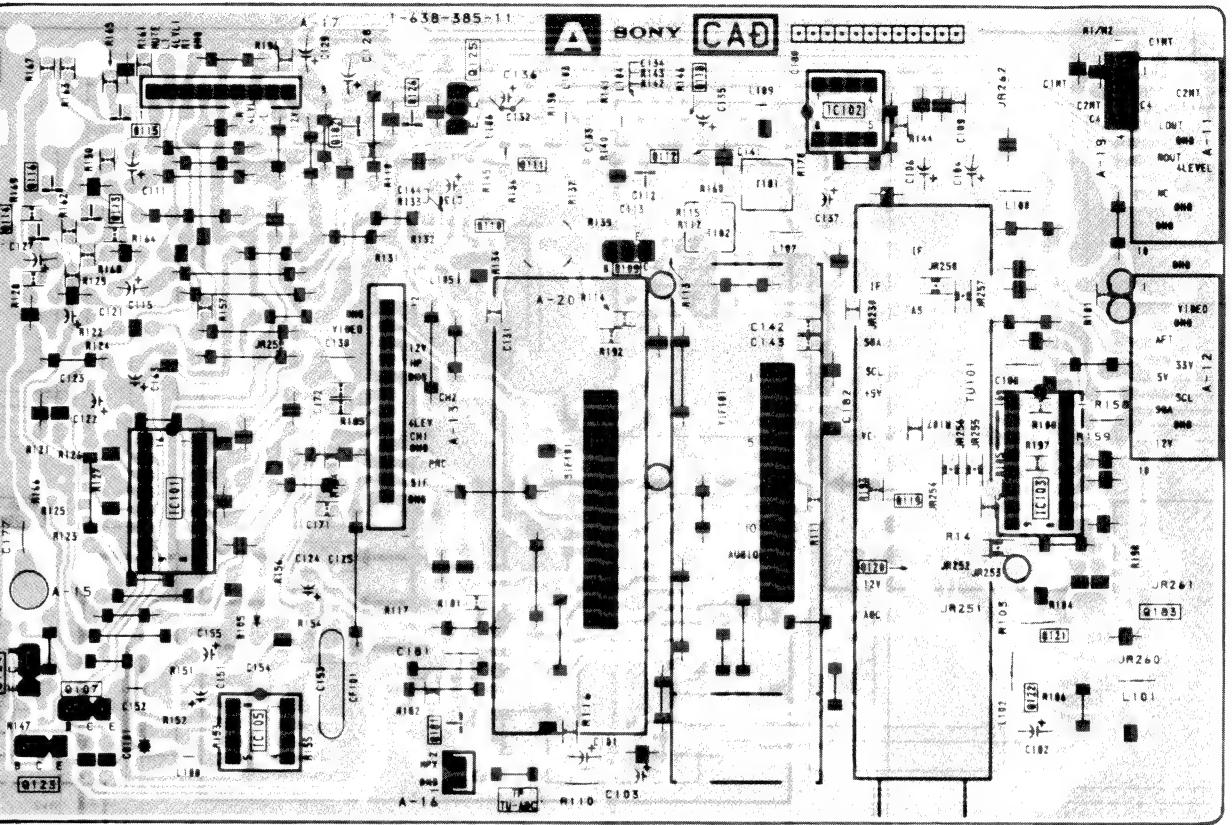
Pitch : 5mm  
Rating electrical power: 1/4W

- Chip resistor is in 1/10W.
- All resistors are in ohms.  $k\Omega = 1000\Omega$ ,  $M\Omega = 1000k\Omega$
- : nonflammable resistor.
- : fusible resistor.
- $\triangle$  : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B.unless otherwise noted.
- All voltages are in V.
- Readings are taken with a 10M $\Omega$  digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- : B + line.
- : signal path. (RF)

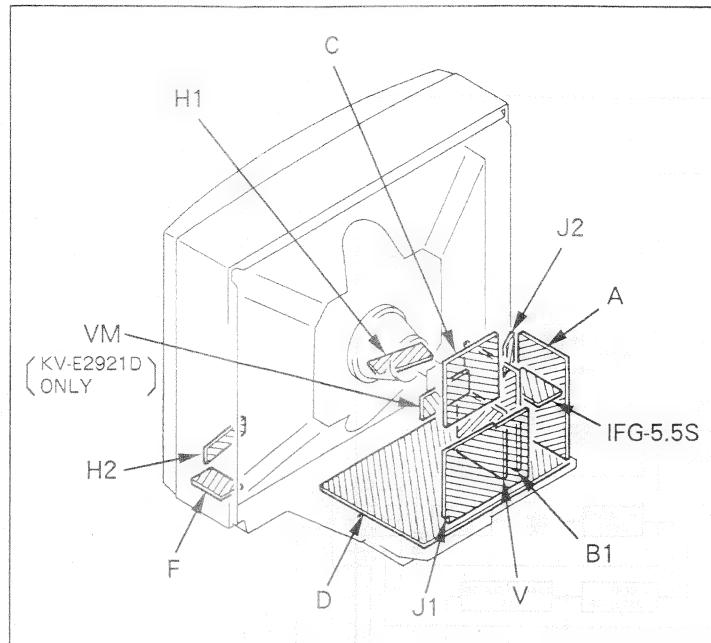
**A** [TUNER, SIF, VIF] **F** [AC IN, POWER SW] **J1** [AUDIO CONTROL, AV INPUT, Y/C INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION] **J2** [SPEAKER TERMINAL]

**VM** [V

### - A BOARD -



## 5-2. CIRCUIT BOARDS LOCATION



## 5-3. SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

**Note:** The components identified by shading and mark are critical for safety. Replace only with part number specified.

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.
- $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

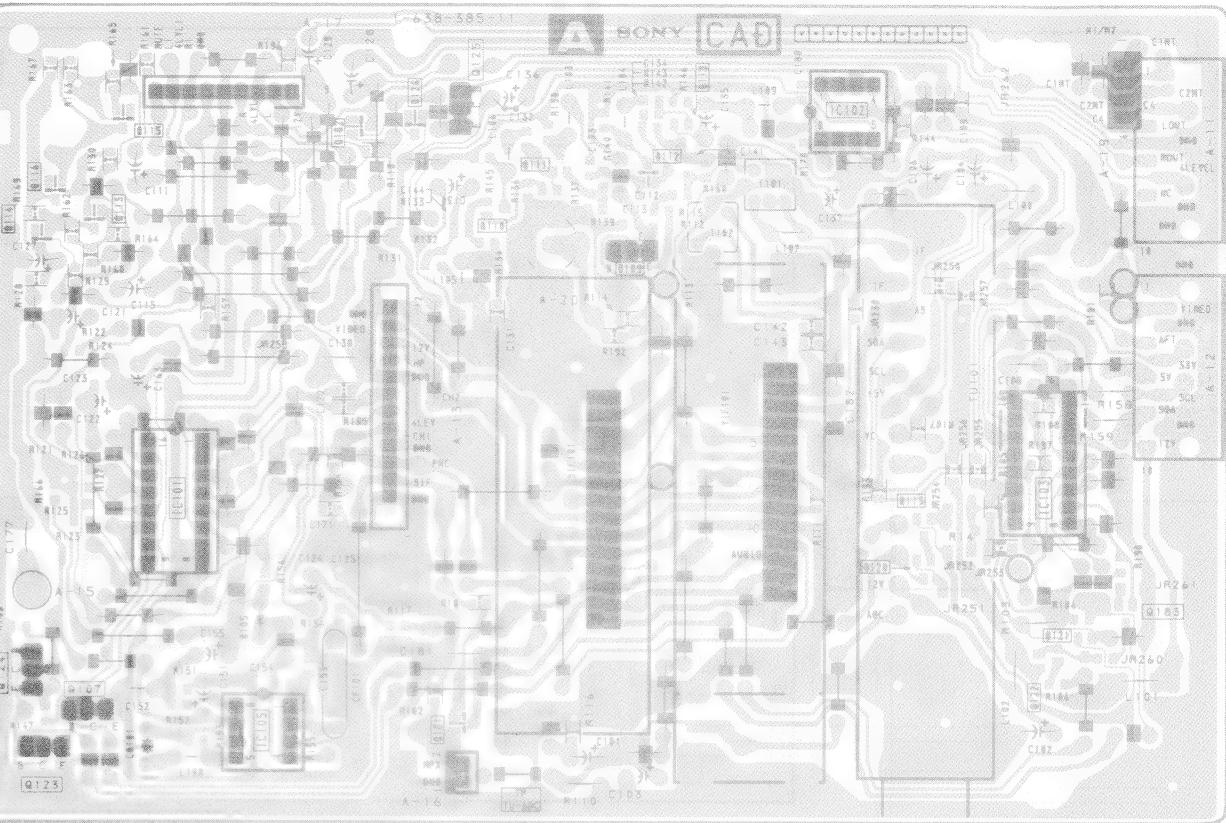
Pitch : 5mm  
Rating electrical power: 1/4W

- Chip resistor is in 1/10W.
- All resistors are in ohms.  $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{k}\Omega$
- : nonflammable resistor.
- : fusible resistor.
- $\triangle$  : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- All voltages are in V.
- Readings are taken with a  $10\text{M}\Omega$  digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- : B+ line.
- : signal path. (RF)

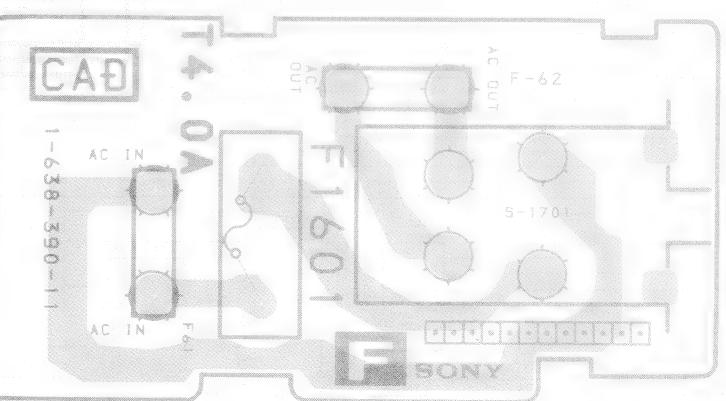
### Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

### - A BOARD -



### - F BOARD -



**A** [TUNER, SIF, VIF] **F** [AC IN, POWER SW] **J1** [AUDIO CONTROL, AV INPUT, Y/C INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION] **J2** [SPEAKER TERMINAL] **VM** [V

PEAKER TERMINAL]

**VM**

[VM AMP]

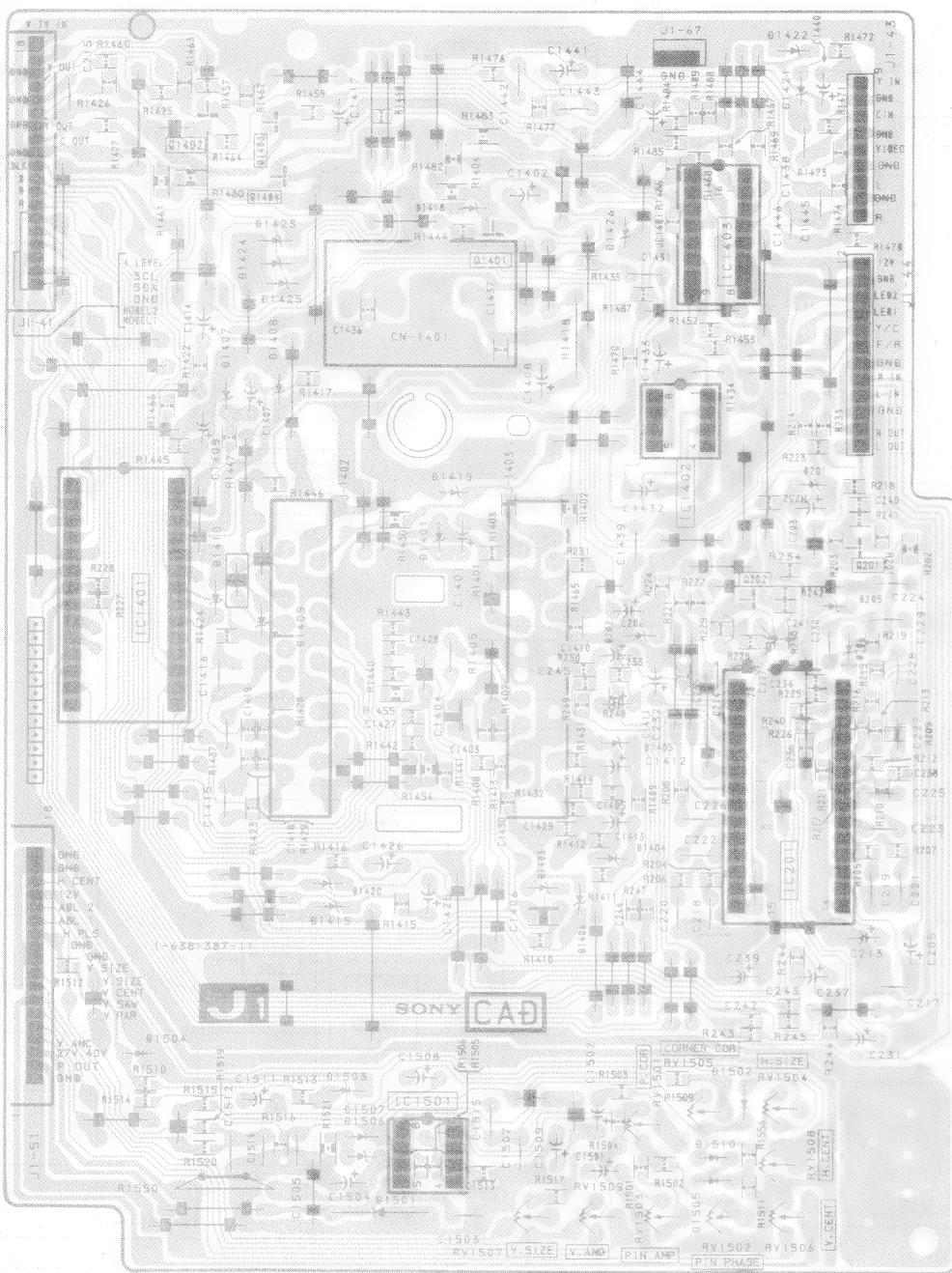
**H1**

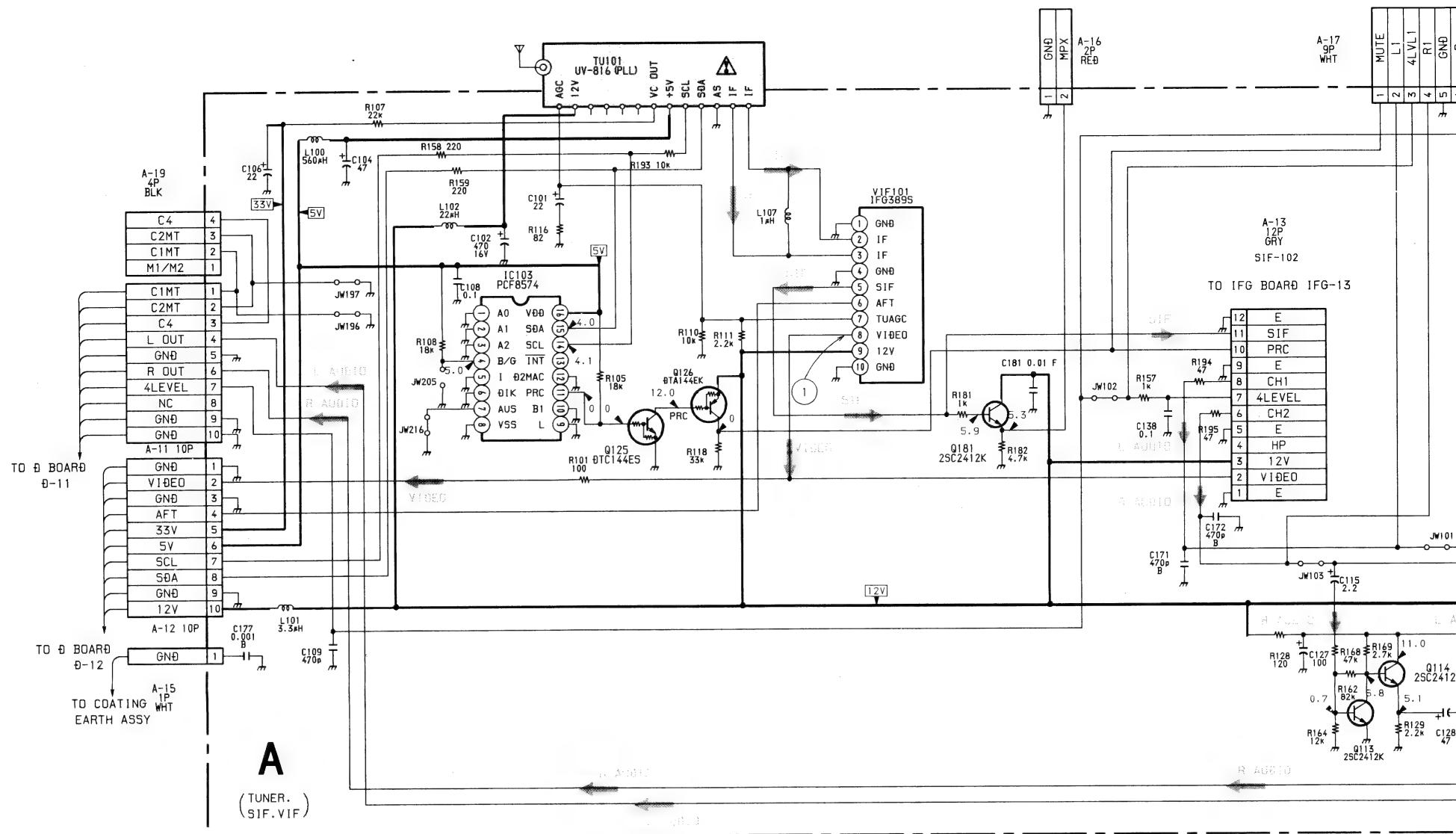
CONTROL SW, AV INPUT  
HEADPHONE

**H2**

SIRCS, RECEIVER,  
INDICATOR

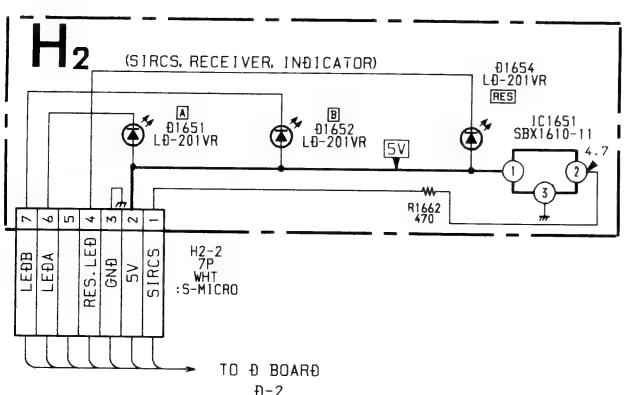
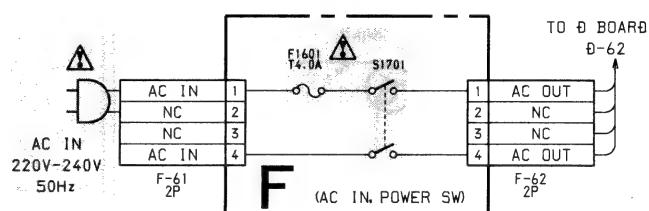
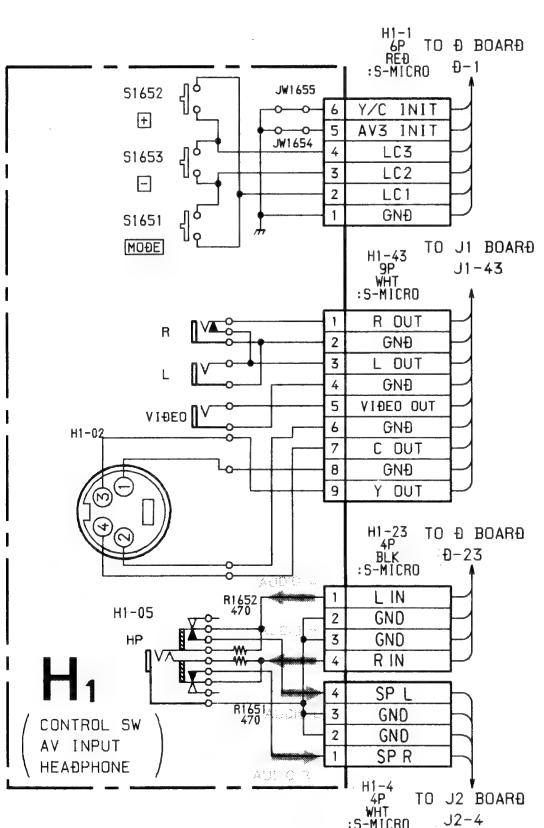
-J1 BOARD-





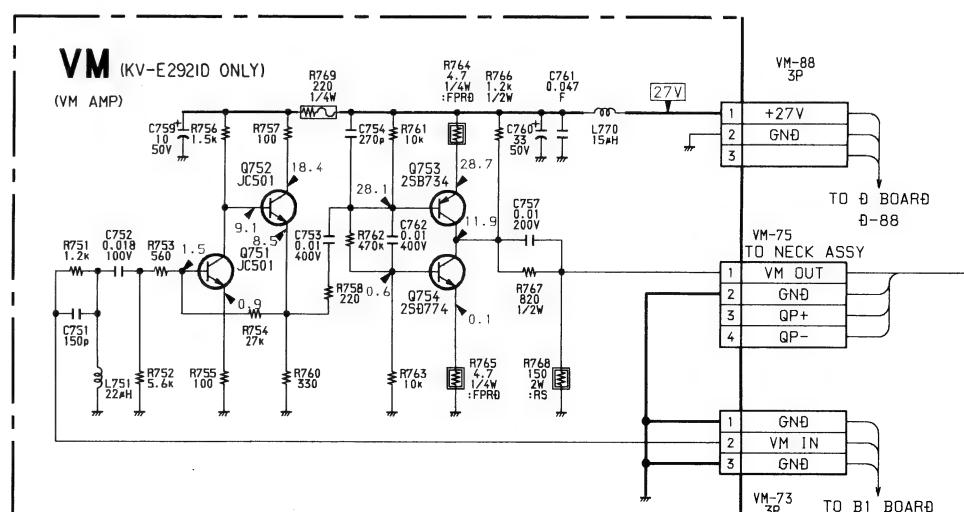
## A BOARD

IC103	PCF857
Q113	2SC241
Q114	2SC241
Q115	2SC241
Q116	2SC241
Q125	DT144
Q126	DTA144
Q181	2SC241



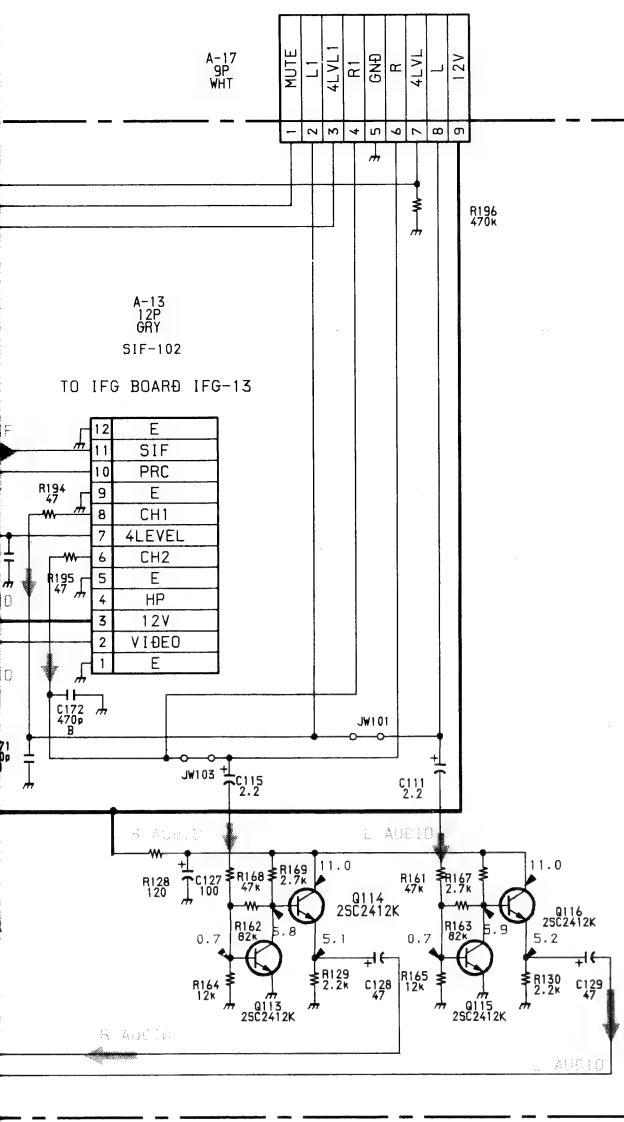
## H2 BOARD

IC1651	SBX1610-11	INFRARED RECEIVER
Ø1651	LØ-201VR	AUDIO CHANNEL A INDICATOR
Ø1652	LØ-201VR	AUDIO CHANNEL B INDICATOR
Ø1654	LØ-201VR	RESET



VM BOARD (KV-E2921D ON

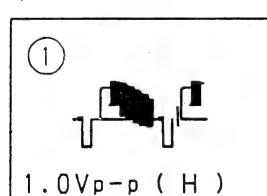
Q751	JC501	RE
Q752	JC501	RE
Q753	2SB734	PU
Q754	2SB774	PU



## A BOARD

IC103	PCF8574	EXPANDER
Q113	2SC2412K	AUDIO AMP
Q114	2SC2412K	AUDIO AMP
Q115	2SC2412K	AUDIO AMP
Q116	2SC2412K	AUDIO AMP
Q125	DT144ES	MUTE SW
Q126	DTA144EK	MUTE SW
Q181	2SC2412K	NICAM BUFFER

## • WAVEFORMS A BOARD



TO D BOARD  
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C  
OUT

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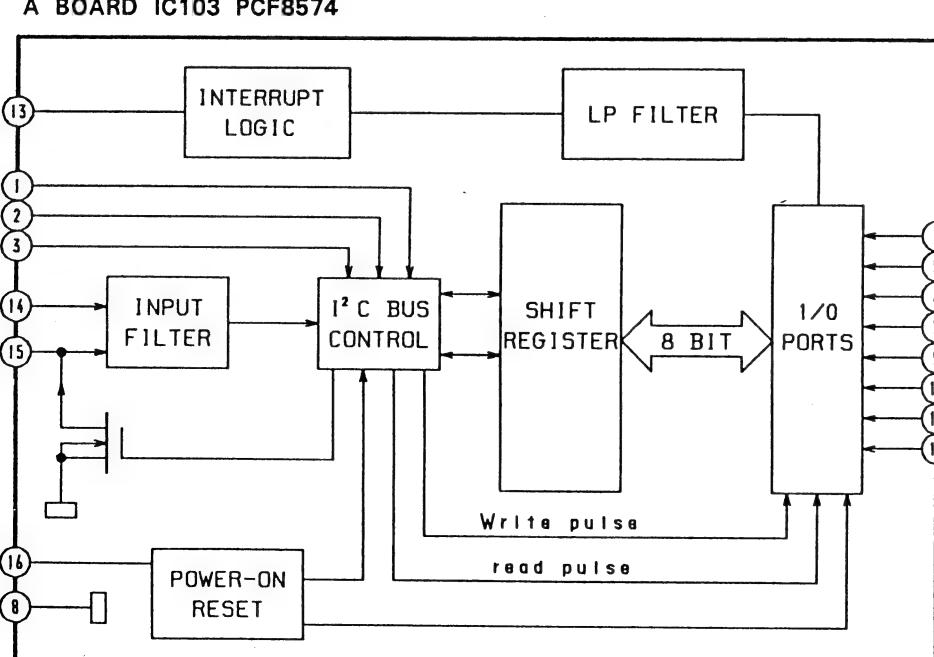
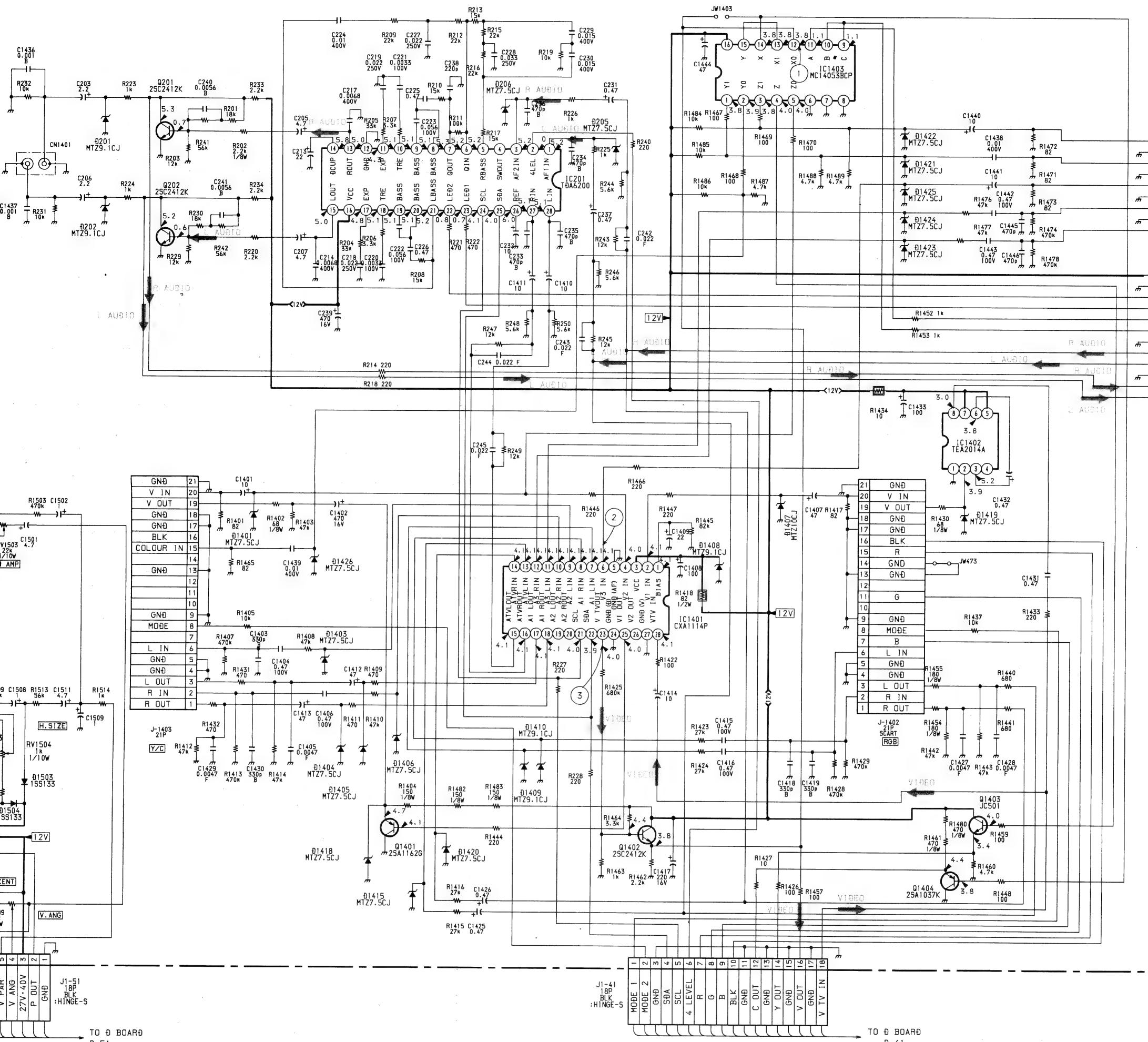
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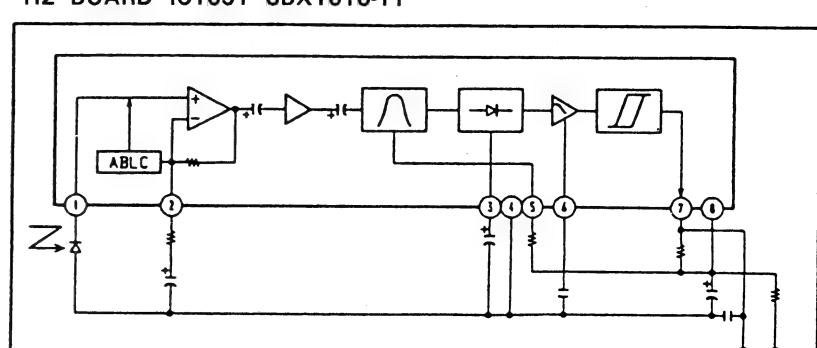
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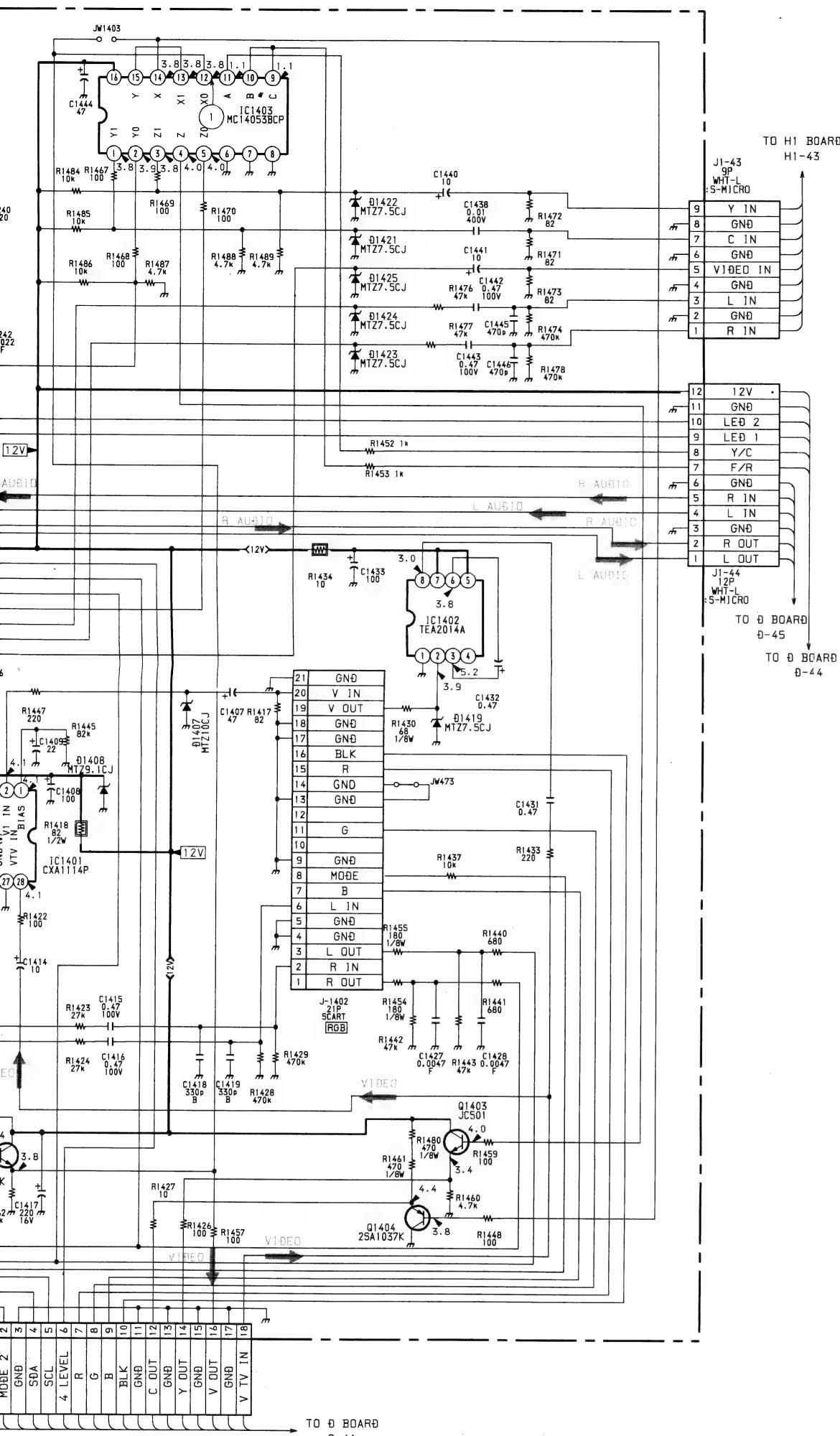


**I1 BOARD \*MARK**

	KV-E2521D	
C1512	0.0068MF	400V
C1514	0.022MF	250V
C1515	820PF	50V
R1515	680K	1/10W:CHIP
R1520	470K	1/10W:CHIP

H2 BOARD IC1651 SBY1610.11



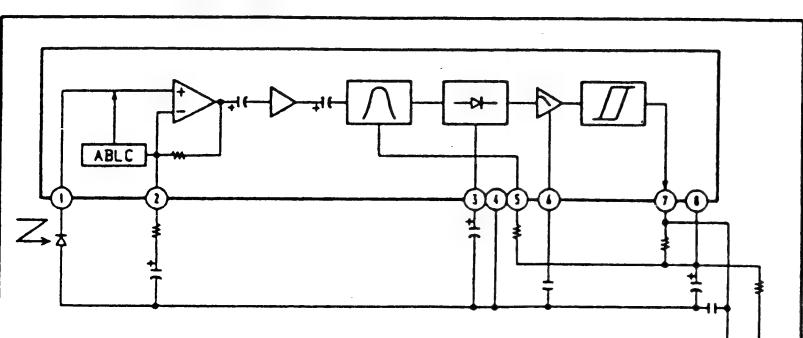


J1 BOARD \* MARK

	KV-E2521D	KV-E2921D
C1512	0.0068MF 400V	—
C1514	0.022MF 250V	—
C1515	820PF 50V	—
R1515	680K 1/10W:CHIP	—
R1520	470K 1/10W:CHIP	390K 1/10W:CHIP
R1550	JW	11W : RS

— NOT MOUNTED

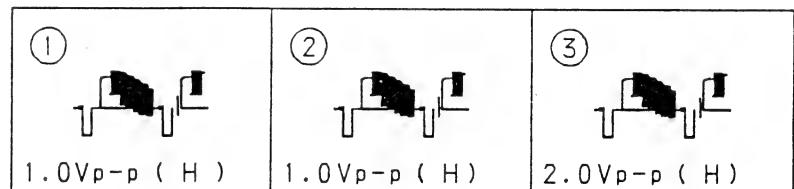
H2 BOARD IC1651 SBX1610-11



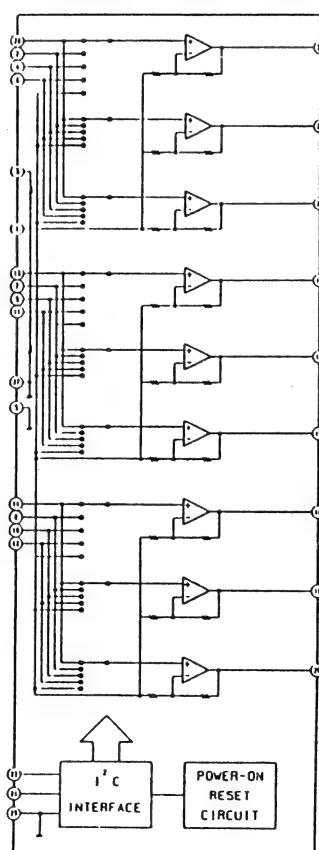
J1 BOARD

IC201	TDA6200	AUDIO CONTROL
IC1401	CXA1114P	AV SW
IC1402	TEA2014A	SCART VIDEO OUT
IC1403	MC14053BCP	COMPOSITE Y/C SW
IC1501	TEA2031A	EAST-WEST CORRECTION
Q201	2SC2412K	AUDIO R BUFF
Q202	2SC2412K	AUDIO L BUFF
Q1401	2SA1162G	VIDEO OUT
Q1402	2SC2412K	VIDEO OUT BUFF
Q1403	JC501	Y OUT BUFF
Q1404	2SA1037K	C OUT BUFF
D201	MTZJ-T-77-9.1C	PROTECT
D202	MTZJ-T-77-9.1C	PROTECT
D205	MTZJ-T-77-7.5C	PROTECT
D206	MTZJ-T-77-7.5C	PROTECT
D1401	MTZJ-T-77-7.5C	PROTECT
D1403	MTZJ-T-77-7.5C	PROTECT
D1404	MTZJ-T-77-7.5C	PROTECT
D1405	MTZJ-T-77-7.5C	PROTECT
D1406	MTZJ-T-77-7.5C	PROTECT
D1407	MTZJ-T-77-10C	PROTECT
D1408	MTZJ-T-77-9.1C	REG
D1409	MTZJ-T-77-9.1C	PROTECT
D1410	MTZJ-T-77-9.1C	PROTECT
D1415	MTZJ-T-77-7.5C	PROTECT
D1418	MTZJ-T-77-7.5C	PROTECT
D1419	MTZJ-T-77-7.5C	PROTECT
D1420	MTZJ-T-77-7.5C	PROTECT
D1421	MTZJ-T-77-7.5C	PROTECT
D1422	MTZJ-T-77-7.5C	PROTECT
D1423	MTZJ-T-77-7.5C	PROTECT
D1424	MTZJ-T-77-7.5C	PROTECT
D1425	MTZJ-T-77-7.5C	PROTECT
D1426	MTZJ-T-77-7.5C	PROTECT
D1501	RGP10GPKG23	PROTECT
D1502	ISS5133	DE COUPLING H SIZE
D1503	ISS5133	CLIPPING V PARABORA
D1504	ISS5133	CLIPPING H PULSE
D1505	ISS5133	REG
D1506	HZS36NB4TD	PROTECT
D1507	ISS5133	PROTECT
D1510	ISS5133	REG

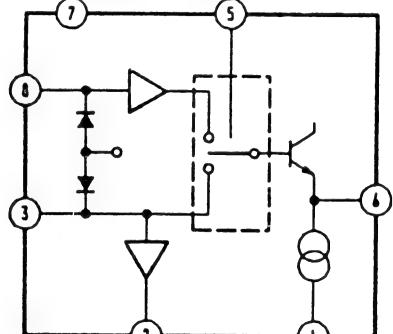
• WAVEFORMS J1 BOARD



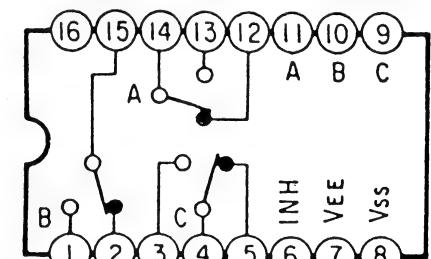
J1 BOARD IC1401 CXA1114P



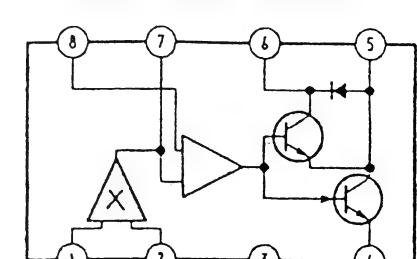
J1 BOARD IC1402 TEA2014A



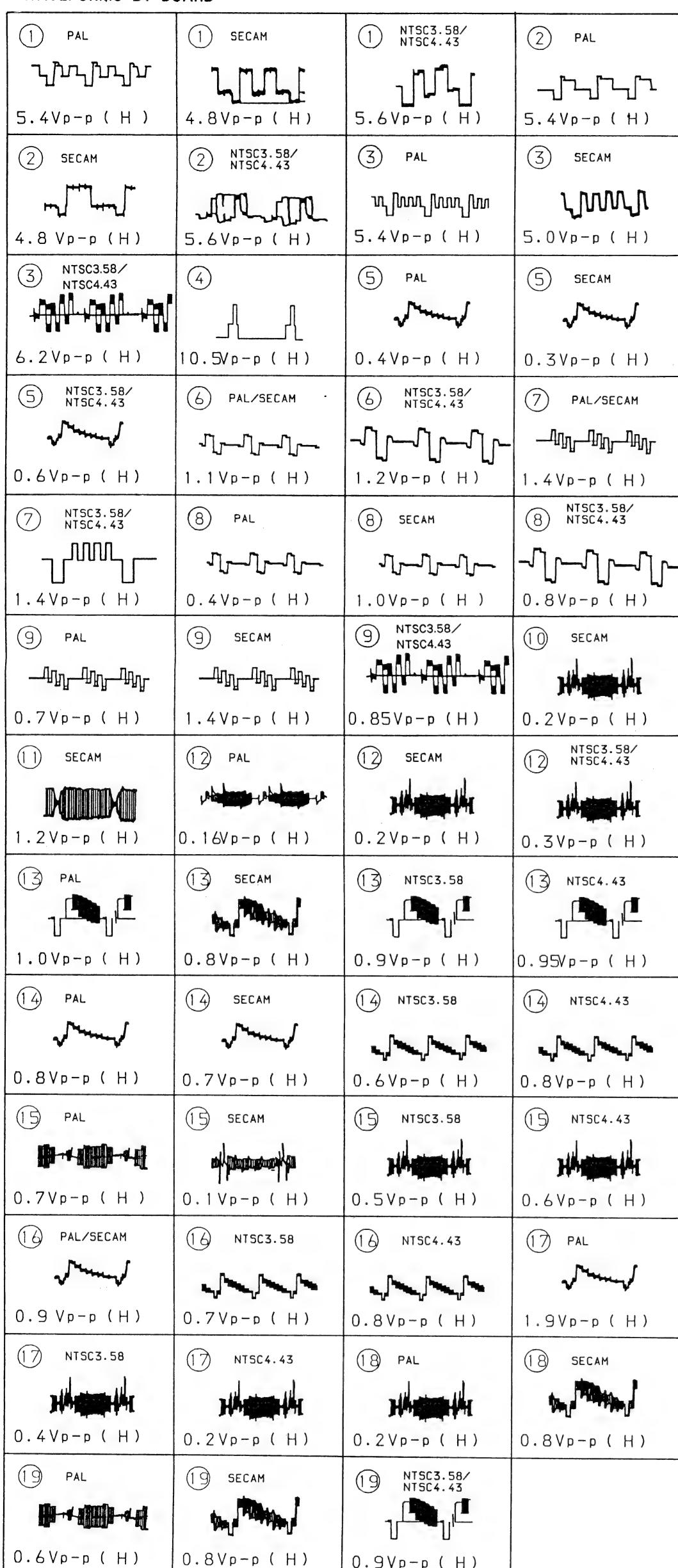
J1 BOARD IC1403 MC14053BCP



J1 BOARD IC1501 TEA2031A



• WAVEFORMS B1 BOARD



As to the voltage value shown by the mark  $\times$  on the Schematic Diagram, see the another list.

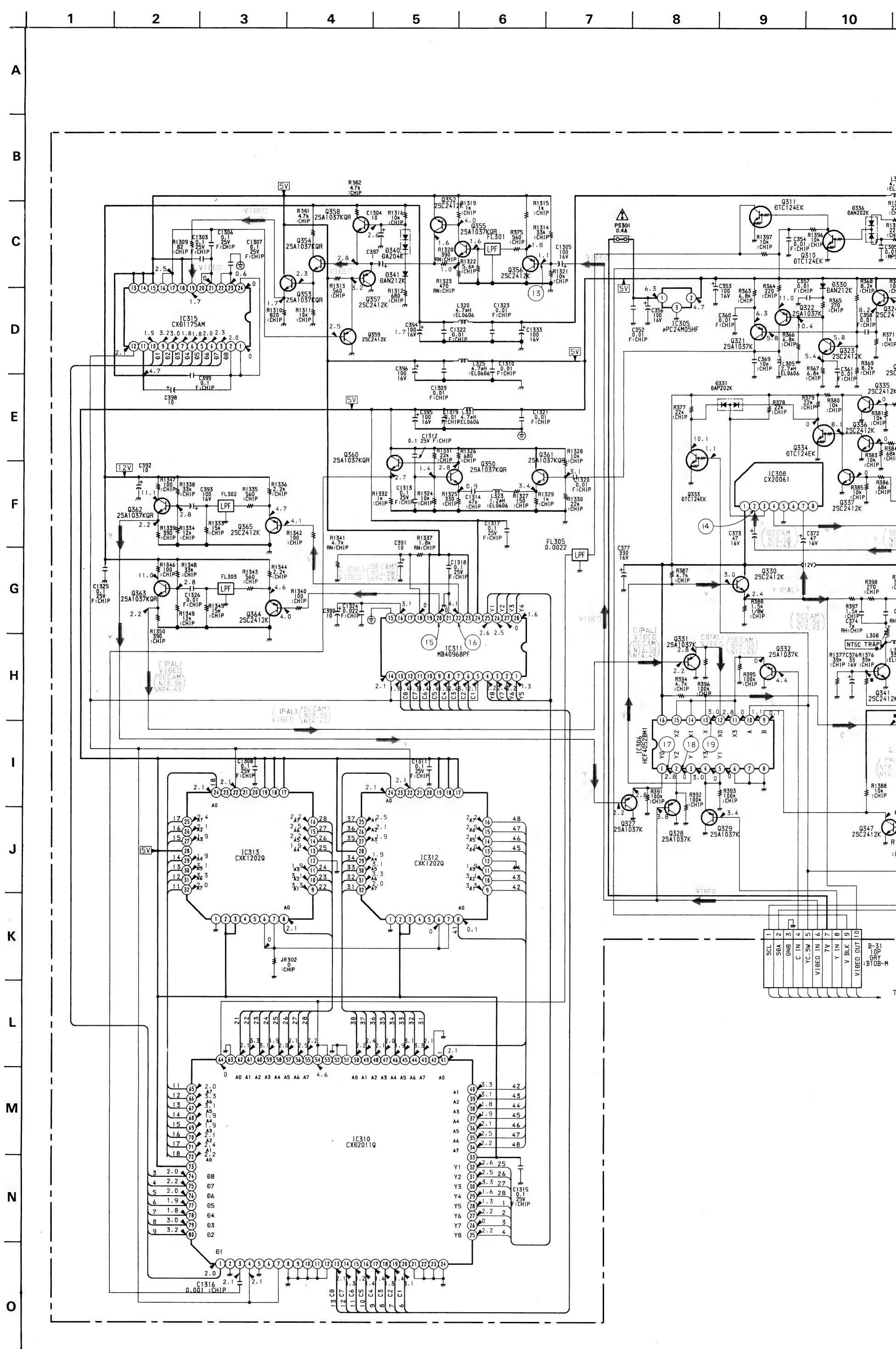
IC·NO	PIN·NO	PAL	SECAM	NTSC 3.38	NTSC 4.43
IC301	(5)	6.7	4.8	4.8	4.8
	(15)	8.9	7.0	7.0	7.0
	(19)	3.4	3.4	3.8	3.4
	(24)	6.6	6.6	6.0	6.3
IC304	(3)	0.1	6.8	6.9	6.8
	(5)	9.9	0	9.9	9.9
	(7)	4.6	0	4.6	4.6
	(8)	3.4	3.0	3.4	3.4
	(9)	3.4	3.0	3.4	3.4
	(10)	4.6	3.4	4.6	4.6
	(11)	2.3	3.1	3.1	2.3
	(12)	5.6	5.6	5.6	7.4
	(13)	7.5	7.5	5.7	5.7
	(14)	0.1	0.1	0.1	6.0
	(15)	0.1	0.1	6.0	0.1
	(16)	0.1	6.0	0.1	0.1
	(17)	6.0	0.1	0.1	0.1

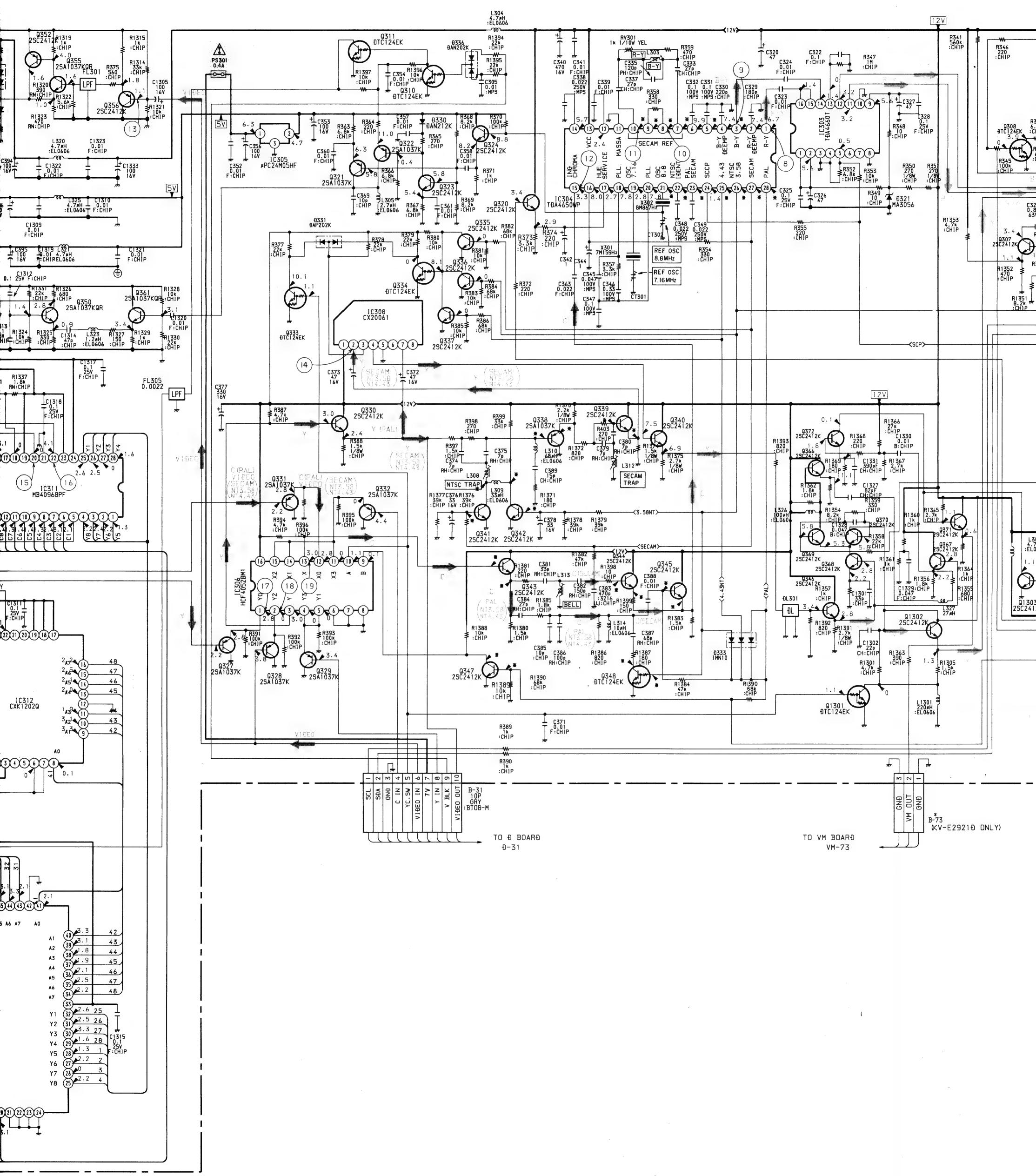
B1 BOARD

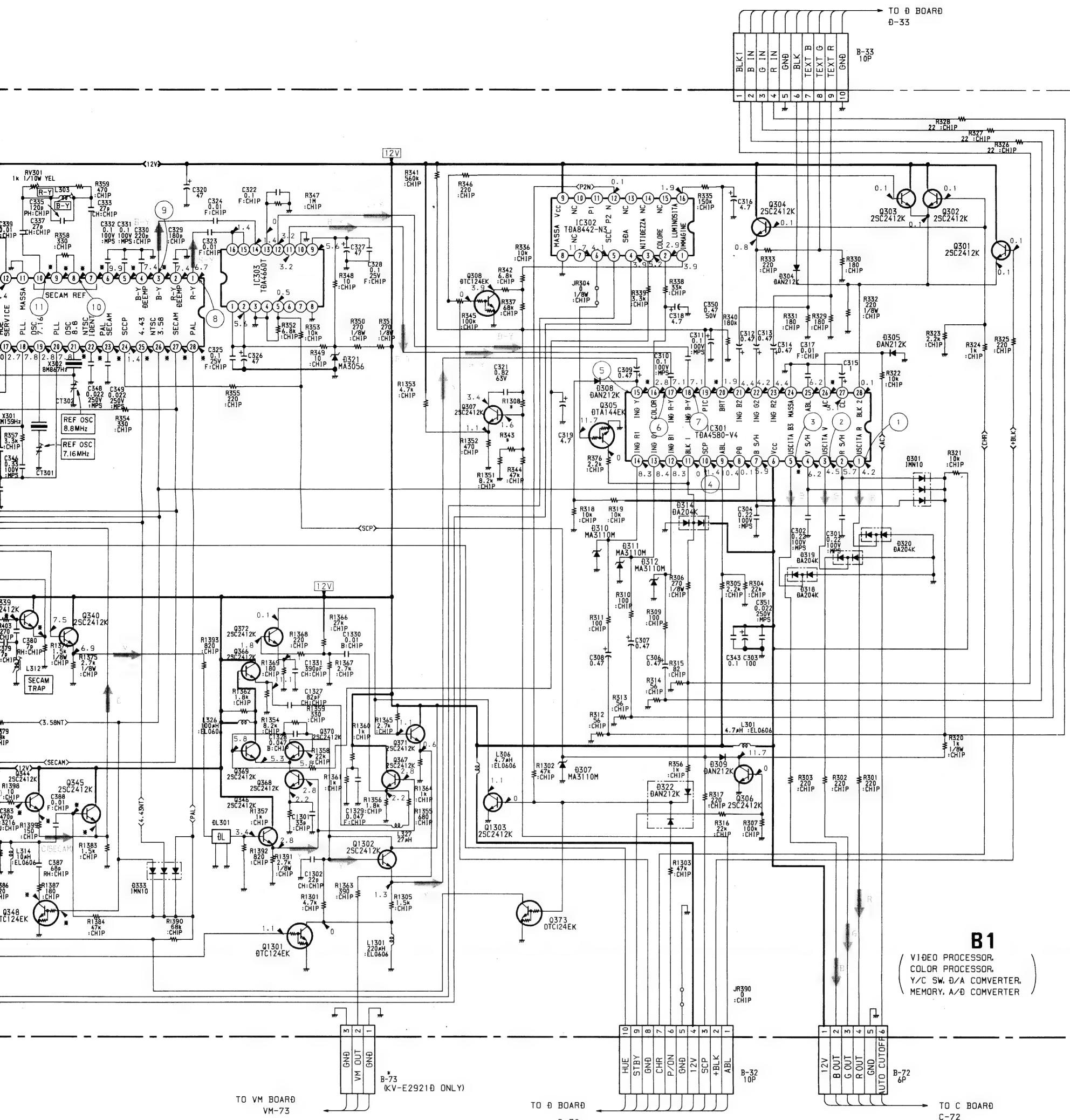
IC301	TDA4580-V4	VIDEO PROCESSOR
IC302	TDA8442-N3	D/A CONVERTOR
IC303	TDA4660T	1H DELAY
IC304	TDA4650WP	COLOR PROCESSOR
IC305	$\mu$ PC24M05HF	REGULATAR
IC306	HCF4052BM1	Y/C SW
IC308	CX20061	Y INTERRUPT
IC310	CX02011Q	COMB CONTROL
IC311	MB40968PF	D/A CONVERTER
IC312	CXK1202Q	MEMORY
IC313	CXK1202Q	MEMORY
IC315	CX01175AM	A/D CONVERTER
Q301	2SC2412K	CANRL +BLK
Q302	2SC2412K	ON SCREEN DISPLAY SW
Q303	2SC2412K	FAS PICTURE MUTE SW
Q304	2SC2412K	ON SCREEN DISPLAY SW
Q305	DTA144EK	ANIT PRIORITY SCART
Q306	2SC2412K	STBY SW
Q307	2SC2412K	ABL
Q308	DT124EK	MUTE
Q310	DT124EK	SECAM SW
Q311	DT124EK	SECAM SW
Q320	2SC2412K	HUE BUFFER
Q321	2SA1037K	CLK AMP3
Q322	2SA1037K	CLK AMP2
Q323	2SC2412K	CLK AMP1
Q324	2SC2412K	CLK BUFFER
Q327	2SA1037K	Y OUT
Q328	2SA1037K	VIDEO IN
Q329	2SA1037K	Y IN
Q330	2SC2412K	VIDEO BUFFER
Q331	2SA1037K	C OUT
Q332	2SA1037K	C IN
Q333	DT124EK	Y/C SW
Q334	DT124EK	Y SW
Q335	2SC2412K	SECAM SW
Q336	2SC2412K	NTSC (3.58) SW
Q337	2SC2412K	NTSC (4.43) SW
Q338	2SA1037K	Y BUFFER
Q339	2SC2412K	Y BUFFER
Q340	2SC2412K	Y BUFFER
Q341	2SC2412K	SECAM TRAP SW
Q342	2SC2412K	NTSC TRAP SW
Q343	2SC2412K	C OUT
Q344	2SC2412K	SECAM SW
Q345	2SC2412K	PAL/SECAM SW
Q346	2SC2412K	Y IN
Q347	2SC2412K	PAL SW
Q348	DT124EK	NTSC (3.58) SW
Q350	2SA1037KQR	CLK AMP
Q352	2SC2412K	VIDEO AMP
Q353	2SA1037KQR	BUFFER
Q354	2SA1037KQR	BUFFER
Q355	2SA1037KQR	VIDEO AMP
Q356	2SC2412K	VIDEO BUFFER
Q357	2SC2412K	CLAMP BIAS
Q358	2SA1037KQR	VIDEO CLAMP
Q359	2SC2412K	CLAMP BIAS
Q360	2SA1037KQR	CLK BUFFER
Q361	2SA1037KQR	CLK AMP
Q362	2SA1037KQR	Y BUFFER
Q363	2SA1037KQR	C BUFFER
Q364	2SC2412K	C BUFFER
Q365	2SC2412K	Y BUFFER
Q366	2SC2412K	SHP BUFFER
Q367	2SC2412K	Y BUFFER
Q368	2SC2412K	SHP AMP
Q369	2SC2412K	SHP AMP
Q370	2SC2412K	SHP AMP
Q371	2SC2412K	VM BUFFER
Q372	2SC2412K	VM AMP
Q373	DT124EK	
Q1301	DT124EK	Y BUFFER
Q1302	2SC2412K	Y BUFFER
Q1303	2SC2412K	VM MUTE
Q301	1MN10	ACO AT ATBY
Q304	DAN212K	PROTECT
Q305	DAN212K	PROTECT
Q307	MA3110M	PROTECT
Q308	DAN212K	PROTECT
Q309	DAN212K	PROTECT
Q310	MA3110M	PROTECT
Q311	MA3110M	PROTECT
Q312	MA3110M	PROTECT
Q314	DA204K	PROTECT
Q318	DA204K	PROTECT
Q319	DA204K	PROTECT
Q320	DA204K	PROTECT
Q321	MA3056	REG
Q322	DAN212K	PROTECT
Q330	DAN212K	BIAS
Q331	DAP202K	Y/C SW
Q333	1MN10	SYSTEM SW
Q336	DAN202K	CORRECT SW
Q340	DA204K	VIDEO AMP
Q341	DAN212K	VIDEO AMP

B1 BOARD \*MARK

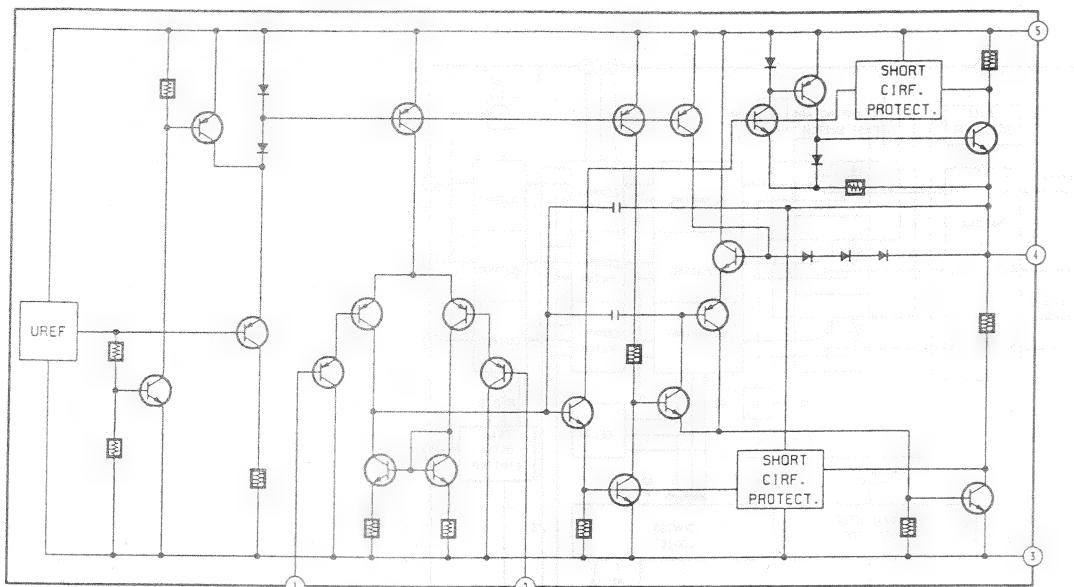
	KV-E2521D	KV-E2921D
R343	560 $\Omega$ 1/10W	2.2k 1/10W
R1308	0 $\Omega$ 1/10W	4.7k 1/10W
B-73	OPEN	3P



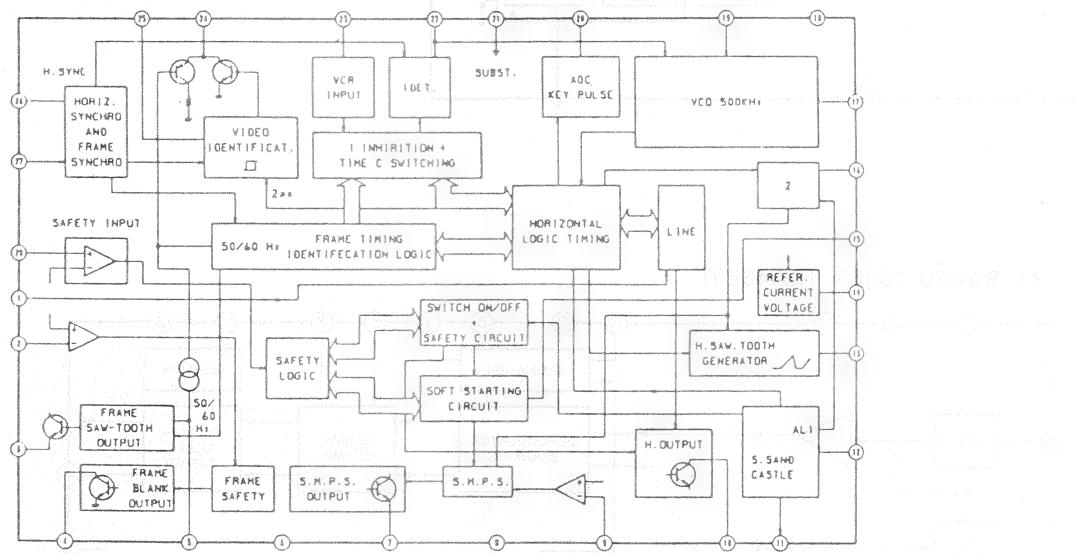




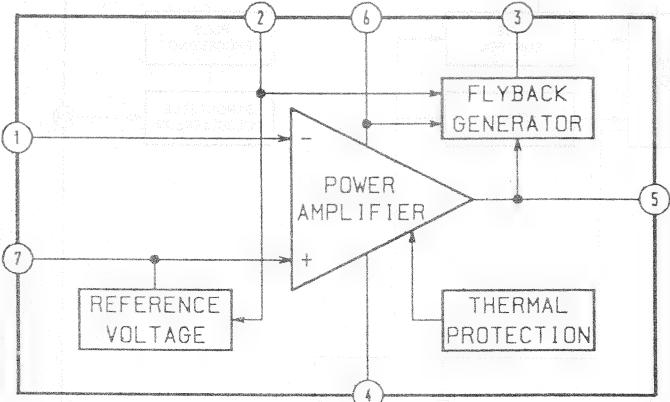
D BOARD IC251/261 TDA2050



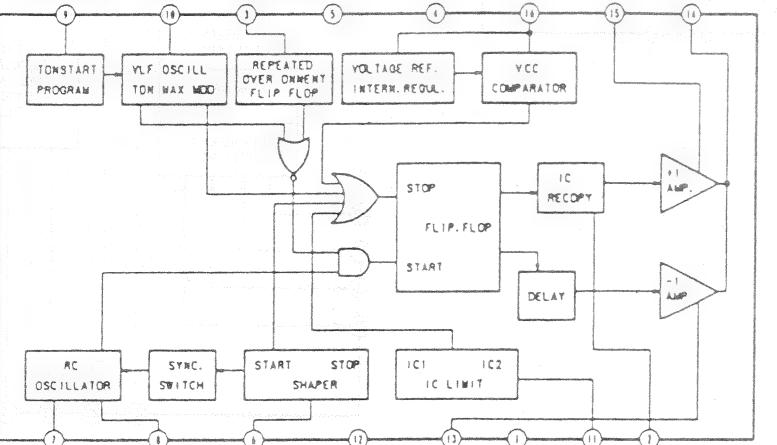
D BOARD IC501 TEA2028B



D BOARD IC502 TDA8170

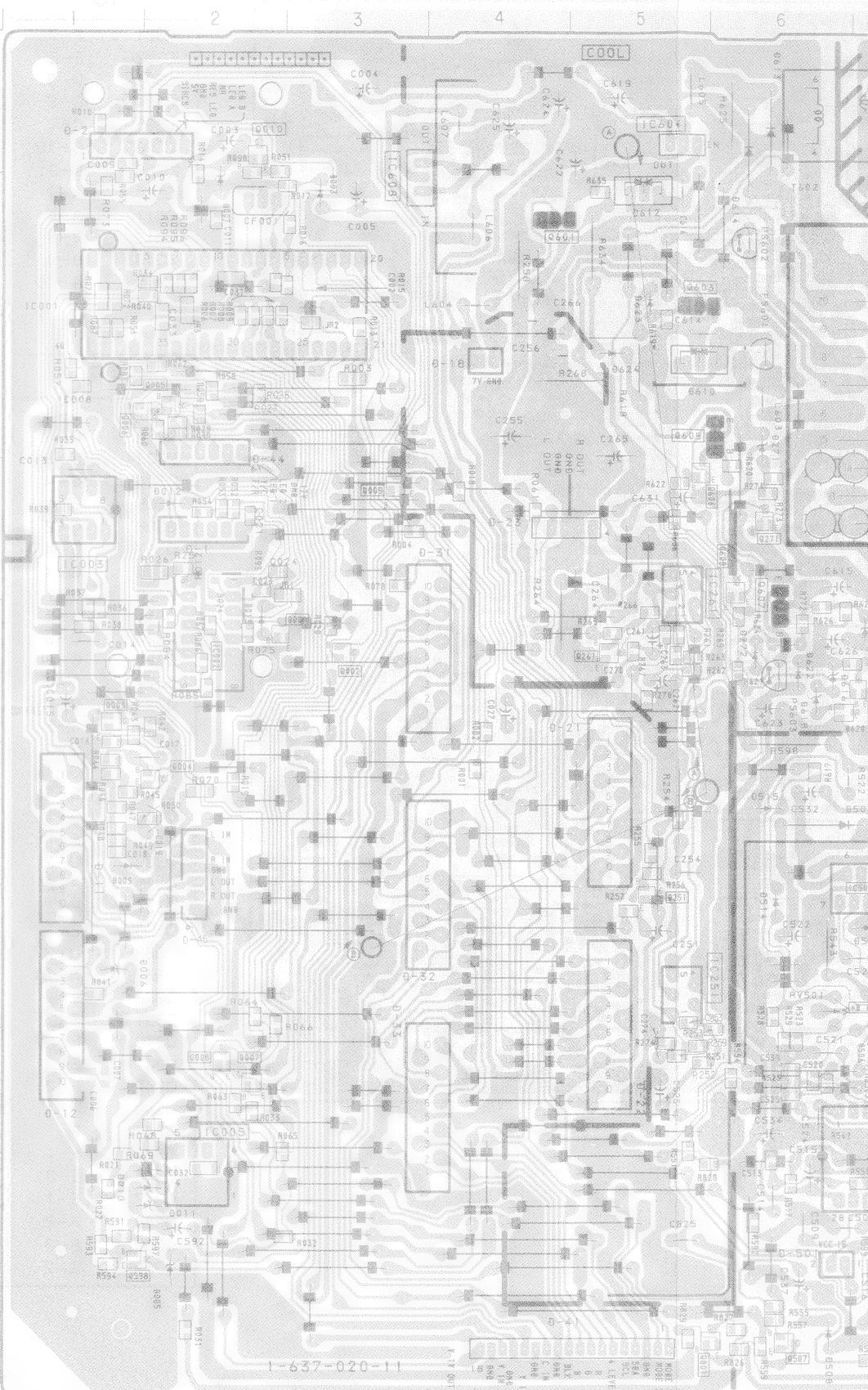


D BOARD IC601 TEA2260



**D** [ TUNING CONTROL, POWER CONTROL, AUDIO OUT, H/V OUT ]

- D BOARD -



IC	
IC001	B-2
IC002	E-2
IC003	D-1
IC005	H-2
IC251	G-5
IC261	D-5
IC501	H-7
IC502	G-7
IC601	A-8
IC604	A-5
IC608	B-3

TR	
Q001	E-2
Q002	E-3
Q003	E-1
Q004	F-2
Q005	C-2
Q006	C-1
Q007	H-2
Q008	H-2
Q009	D-3
Q010	A-2
Q251	G-5
Q261	E-5
Q271	D-6
Q502	H-7
Q505	F-7
Q506	F-7
Q507	J-6
Q598	I-2
Q601	B-4
Q602	C-10
Q603	B-5
Q604	A-7
Q605	E-7
Q606	D-5
Q607	D-6
Q608	D-6
Q609	C-5
Q801	J-6
Q804	G-13
Q805	G-9

D	VR
D003	B-3
D005	I-2
D006	G-1
D007	B-2
D009	F-1

RV501	G-6
RV502	I-8
RV601	A-8

D

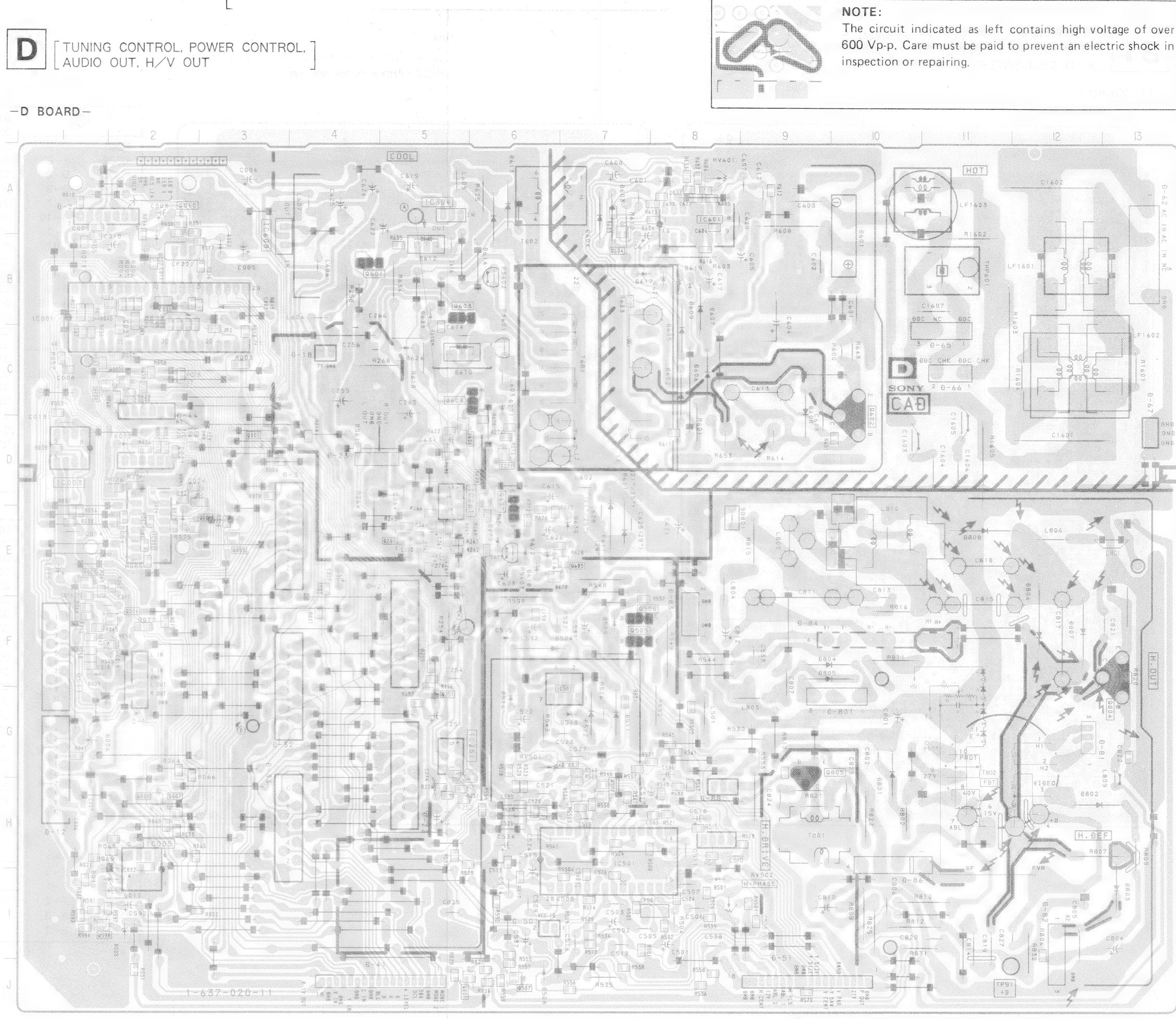
[ TUNING CONTROL, POWER CONTROL,  
AUDIO OUT, H/V OUT ]

## NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

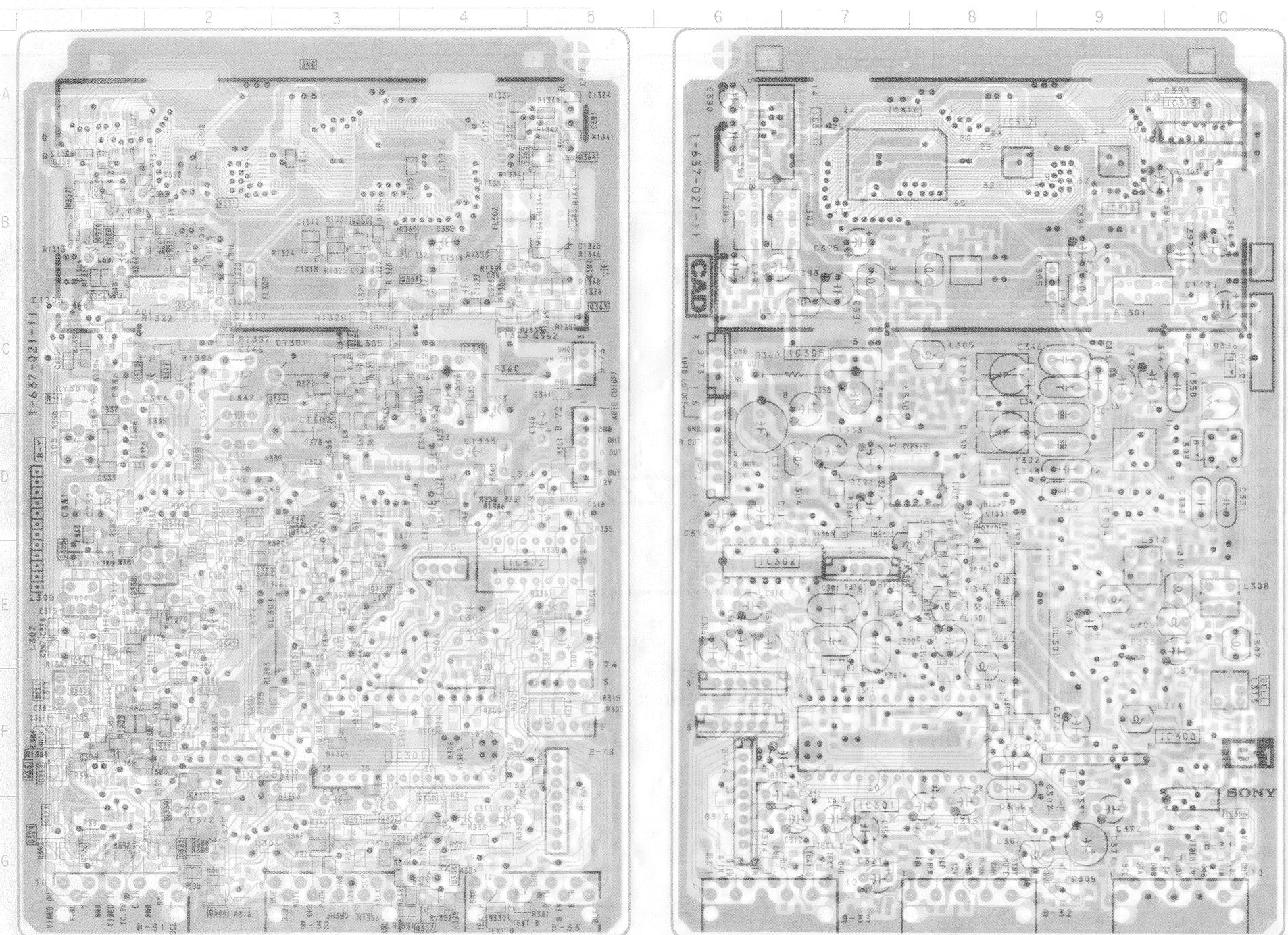
IC		D010	I-2
IC001	B-2	D011	I-2
IC002	E-2	D012	D-2
IC003	D-1	D013	E-2
IC005	H-2	D271	C-6
IC251	G-5	D272	E-6
IC261	D-5	D501	I-8
IC501	H-7	D504	F-6
IC502	G-7	D506	H-7
IC601	A-8	D508	J-6
IC604	A-5	D509	F-7
IC608	B-3	D511	G-7
		D512	G-7
		D513	G-7
		D514	G-6
		D515	F-6
		D601	A-8
		D602	C-8
		Q001	E-2
		Q002	E-3
		Q003	E-1
		Q004	F-2
		Q005	C-2
		Q006	C-1
		Q007	H-2
		Q008	H-2
		Q009	D-3
		Q010	A-2
		Q251	G-5
		Q261	E-5
		Q271	D-6
		Q502	H-7
		Q505	F-7
		Q506	F-7
		Q507	J-6
		Q598	I-2
		Q601	B-4
		Q602	C-10
		Q603	B-5
		Q604	A-7
		Q605	E-7
		Q606	D-5
		Q607	D-6
		Q608	D-6
		Q609	C-5
		Q801	J-6
		Q804	G-13
		Q805	G-9
		D003	B-3
		D005	I-2
		D006	G-1
		D007	B-2
		D009	F-1
		VR	
		RV501	G-6
		RV502	I-8
		RV601	A-8

## -D BOARD-



**B1** [VIDEO PROCESSOR COLOR PROCESSOR,  
Y/C SW, D/A CONVERTER, MEMORY,  
A/D CONVERTER]

-B1 BOARD-

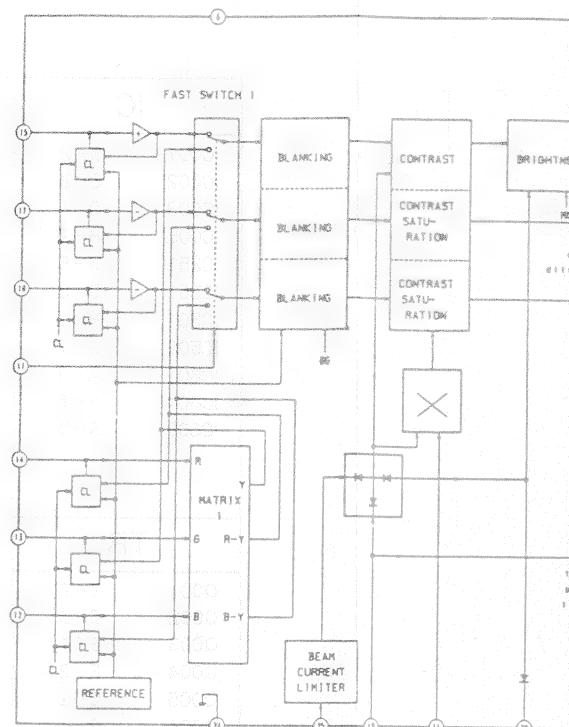


Note :

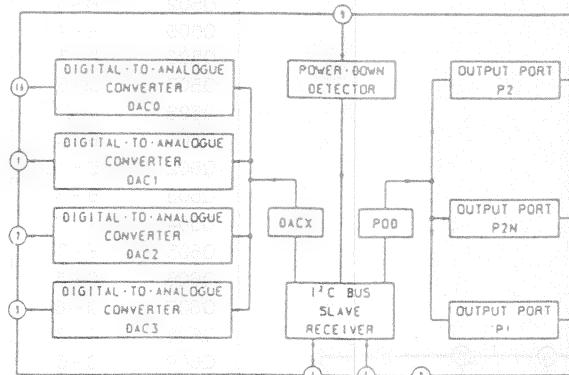
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

B1 BOARD IC301 TDA4580-V4

IC	
IC301	F-7
IC302	E-6
IC303	D-8
IC304	D-9
IC305	C-7
IC306	G-10
IC308	F-9
IC310	A-7
IC311	A-7
IC312	B-8
IC313	B-9
IC315	A-10
Q353	B-1
Q354	B-1
Q355	C-2
Q356	C-1
Q357	B-1
Q358	B-1
Q359	B-1
Q360	B-3
Q361	C-4
Q362	C-5
Q363	C-5
Q364	B-5
Q365	A-5
Q366	D-3
Q367	E-8
Q368	E-8
Q369	E-8
Q370	E-8
Q371	D-8
Q372	D-8
Q373	E-3
Q1301	E-3
Q1302	E-3
Q1303	F-3
D301	F-8
D304	G-6
D305	F-6
D307	G-9
D308	F-8
D309	G-9
D310	E-7
D311	F-7
D312	E-7
D314	F-7
D318	E-7
D319	E-7
D320	E-8
D321	D-7
D322	F-8
D330	D-7
D331	F-9
D333	E-9
D336	C-10
D340	B-1
D341	B-2
Q343	F-1
Q344	F-1
Q345	F-1
Q346	E-3
Q347	F-1
Q348	F-2
Q350	B-3
Q352	B-2
RV301	C-10

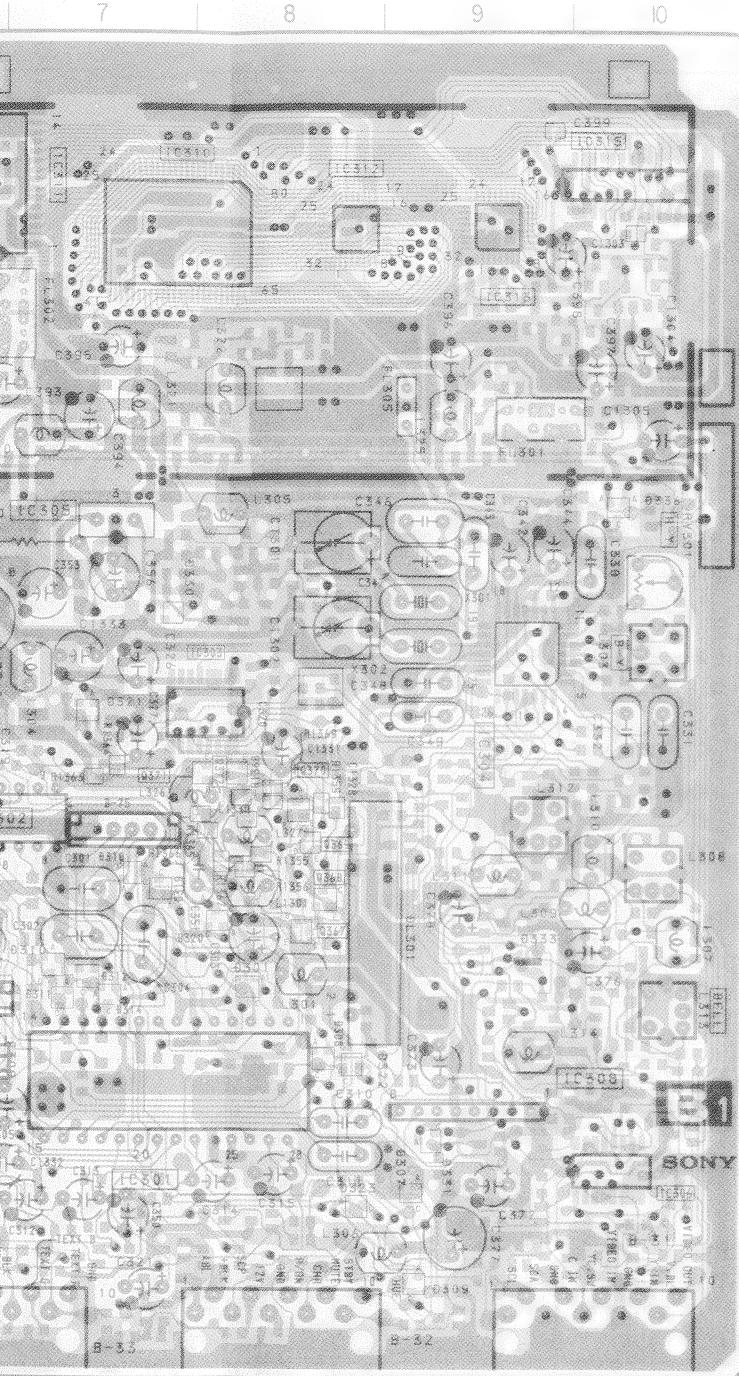


B1 BOARD IC302 TDA8442-N3

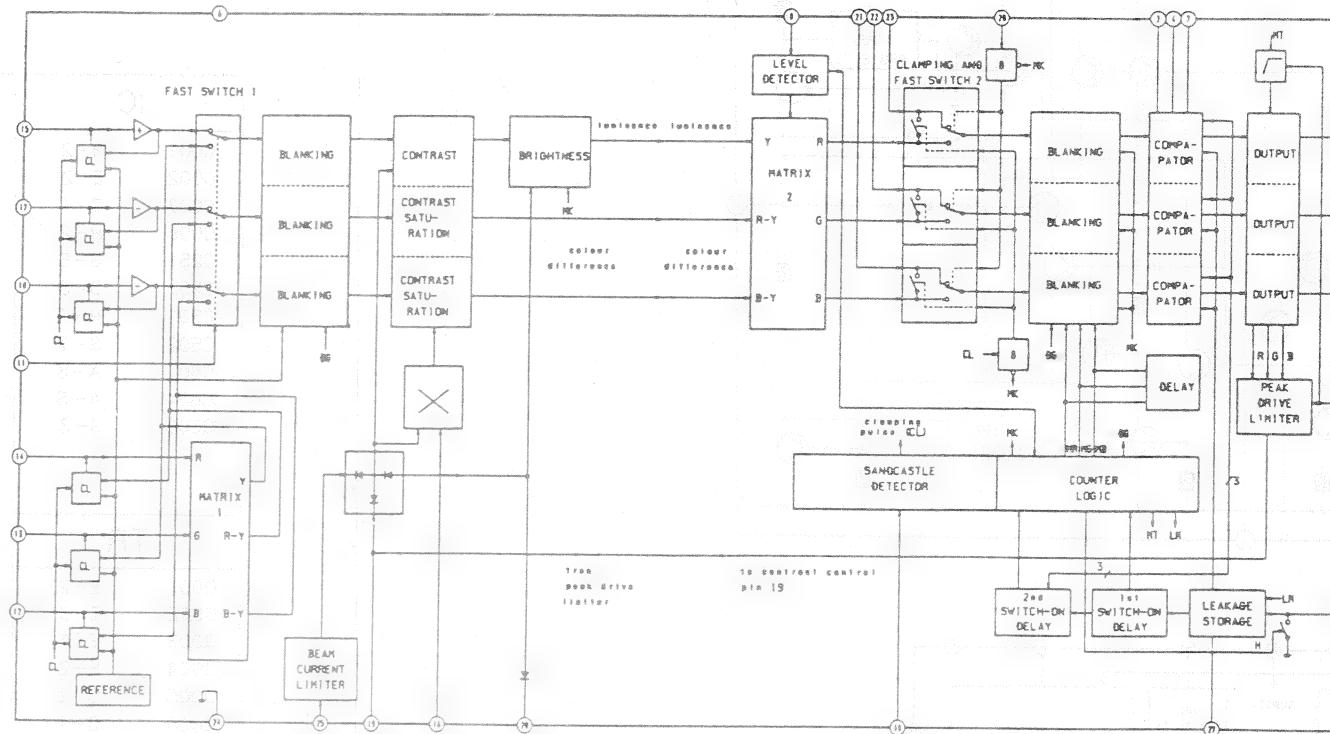


Note:

- Pattern from the side which enables seeing.
- Pattern of the rear side.

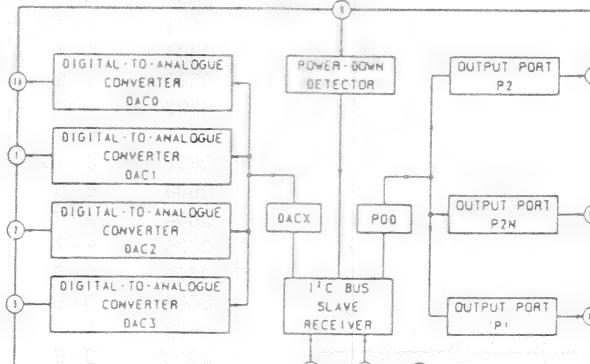


B1 BOARD IC301 TDA4580-V4

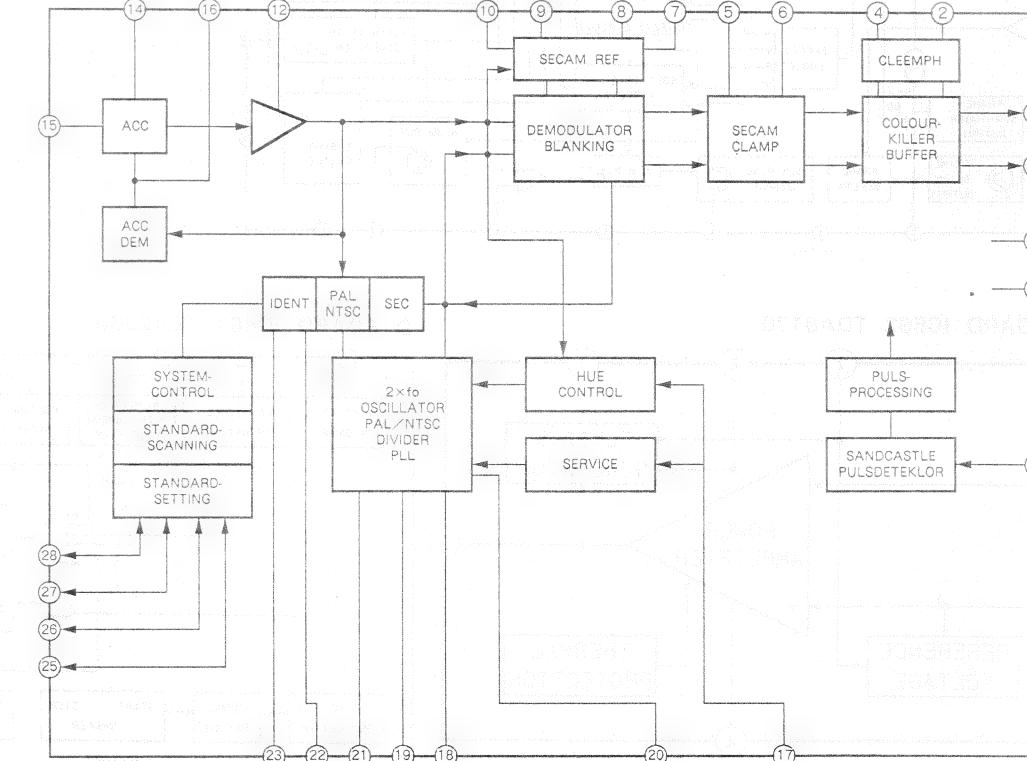


IC	Q353	B-1
IC301	F-7	
IC302	E-6	
IC303	D-8	
IC304	D-9	
IC305	C-7	
IC306	G-10	
IC308	F-9	
IC310	A-7	
IC311	A-7	
IC312	B-8	
IC313	B-9	
IC315	A-10	
TR		
Q301	G-3	
Q302	G-3	
Q303	G-3	
Q304	G-4	
Q305	E-4	
Q306	G-2	
Q307	G-4	
Q308	G-4	
Q310	C-1	
Q311	C-2	
D		
D301	F-8	
D302	C-3	
D303	C-3	
D304	D-3	
D305	C-3	
D306	C-3	
D307	D-3	
D308	C-3	
D309	D-3	
D310	G-1	
D311	G-1	
D312	G-1	
D313	F-1	
D314	G-2	
D315	G-2	
D316	F-2	
D317	F-2	
D318	E-2	
D319	E-2	
D320	E-1	
D321	D-2	
D322	D-2	
D323	D-2	
D324	E-1	
D325	E-1	
D326	E-2	
D327	E-2	
D328	E-1	
D329	E-2	
D330	E-2	
D331	F-1	
D332	F-1	
D333	F-1	
D334	F-1	
D335	F-1	
D336	F-1	
D337	F-1	
D338	F-1	
D339	F-1	
D340	F-1	
D341	F-1	
D342	F-1	
D343	F-1	
D344	F-1	
D345	F-1	
D346	E-3	
D347	F-1	
D348	F-2	
D349	B-3	
D350	B-2	
VR		
RV301	C-10	

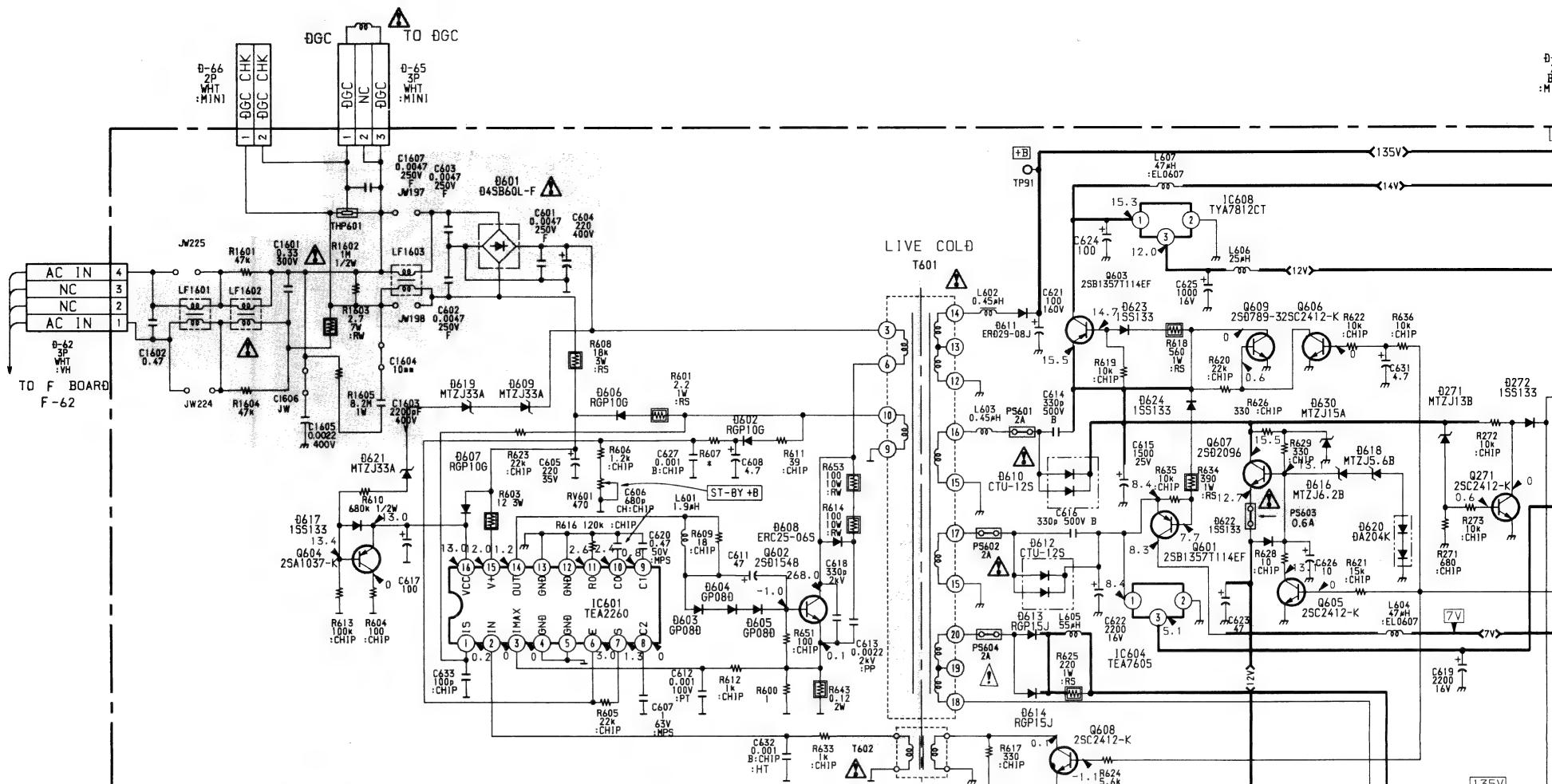
B1 BOARD IC302 TDA8442-N3



B1 BOARD IC303 TDA4660T



A



C

D

E

F

G

H

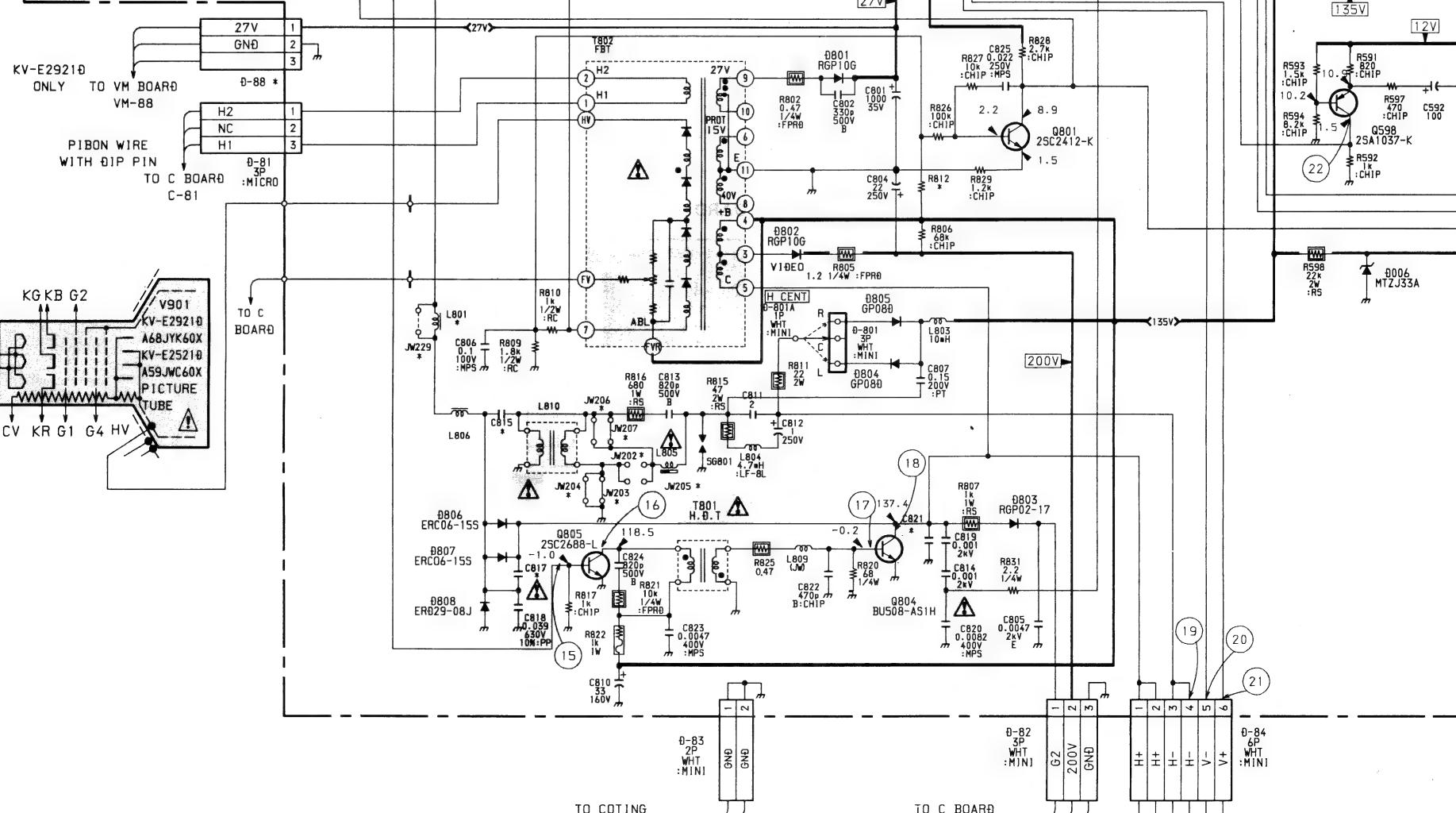
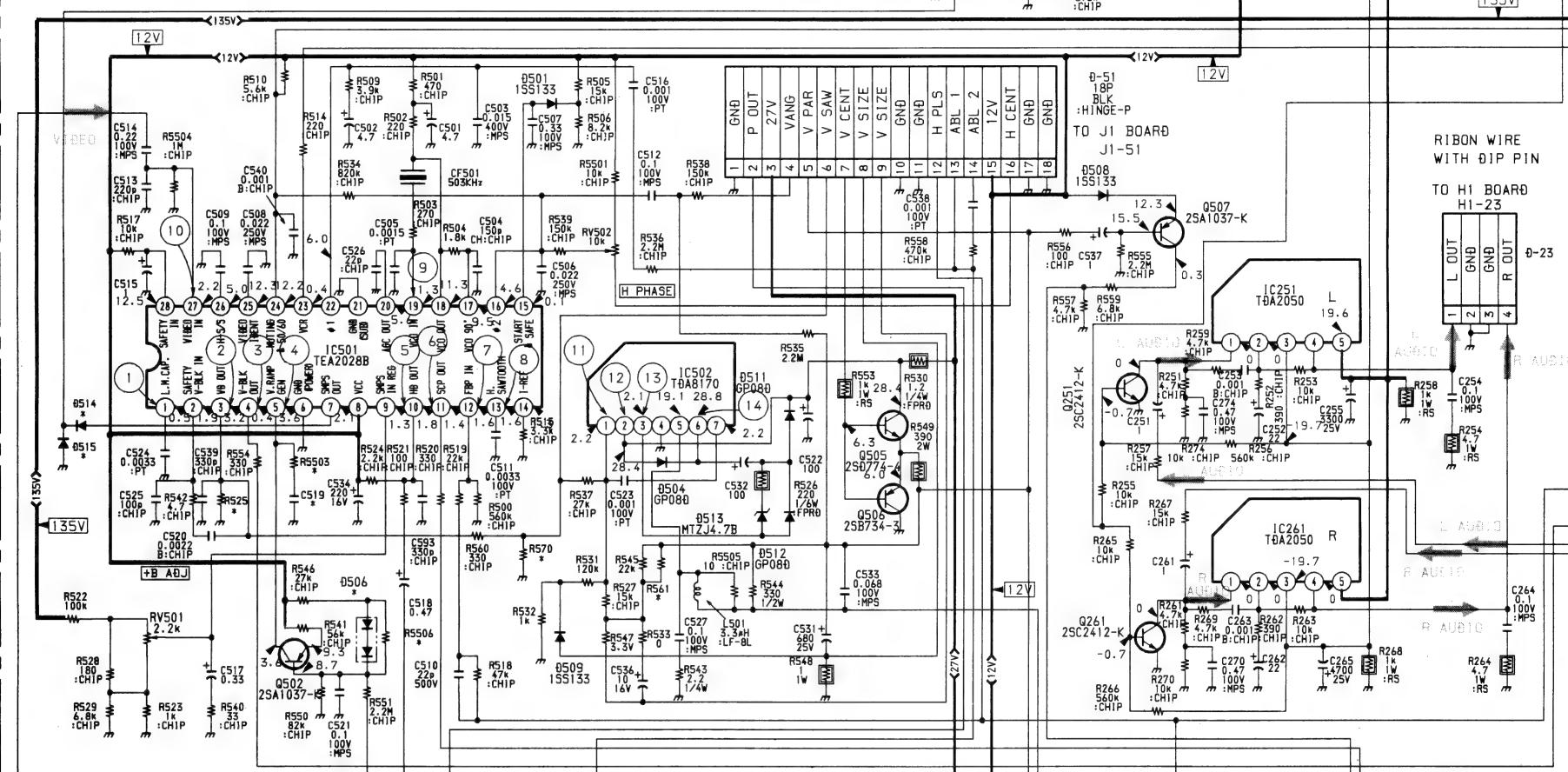
K

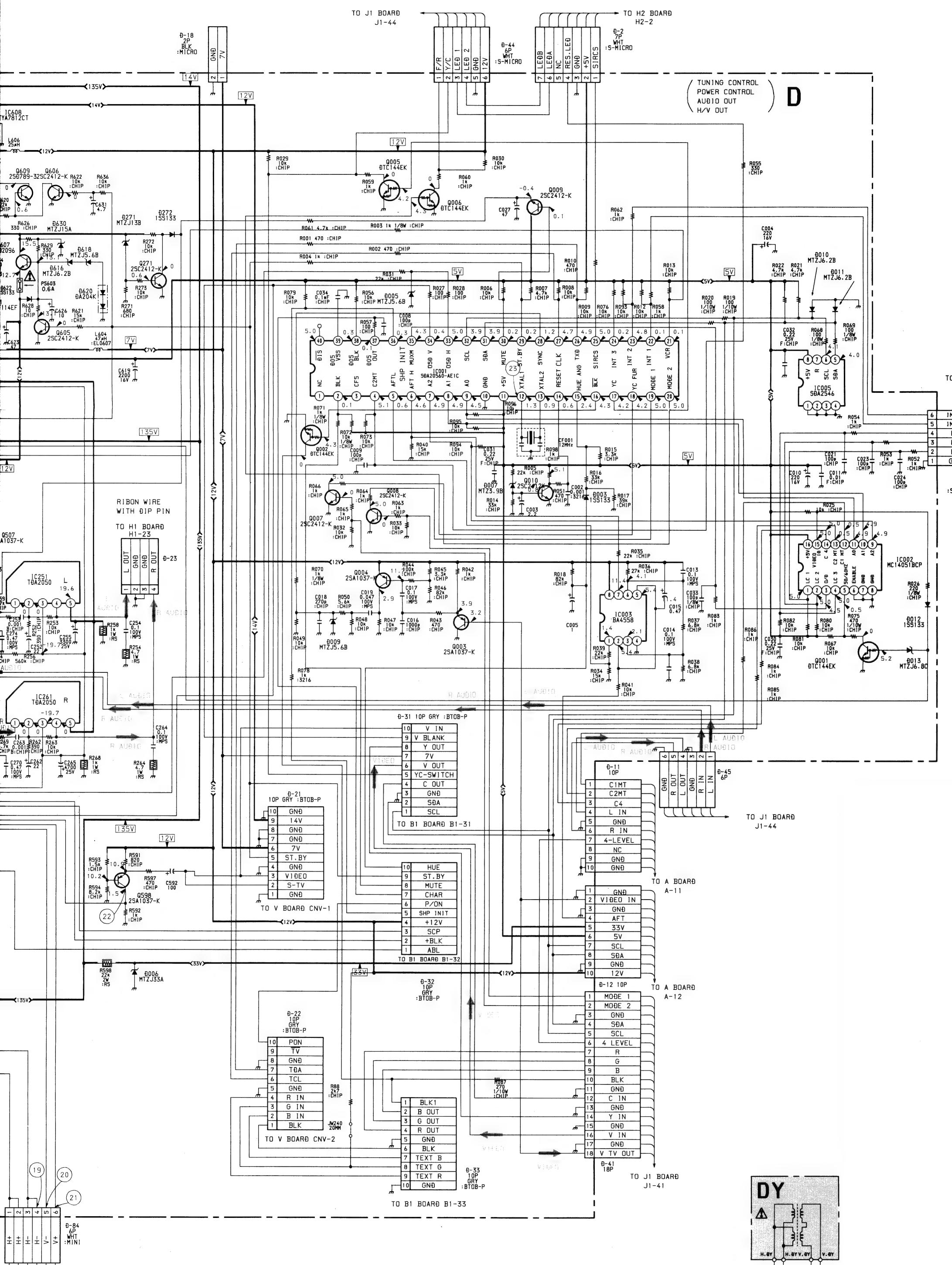
L

M

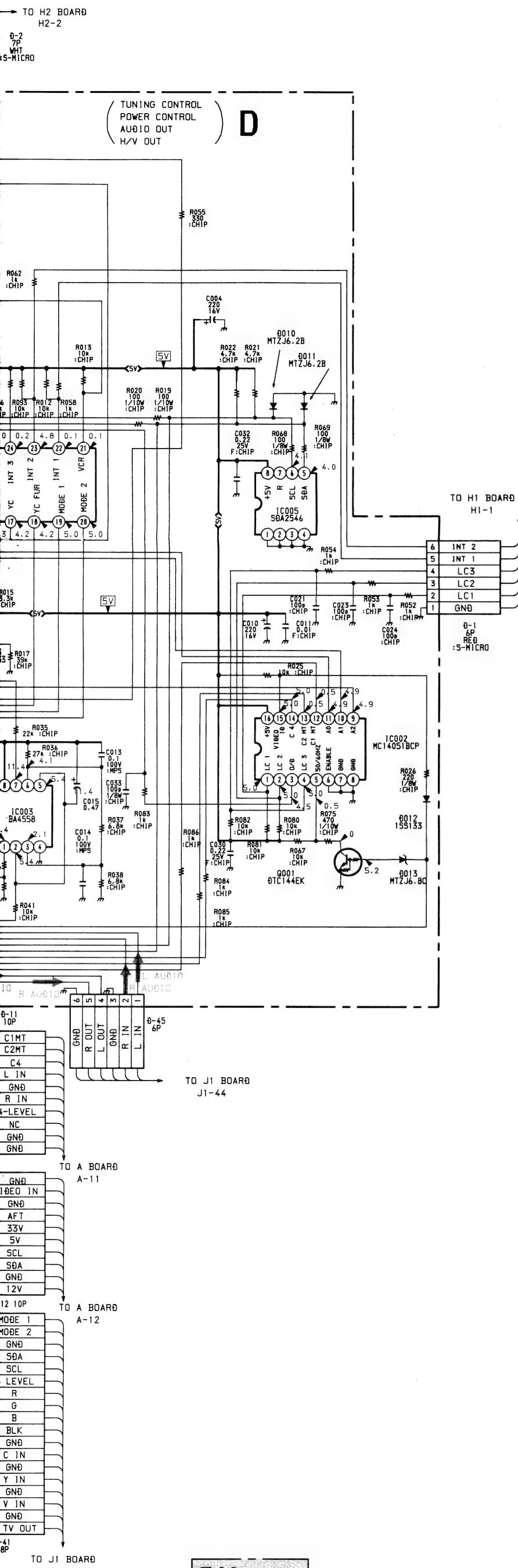
O

P

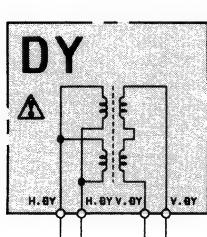




## D BOARD



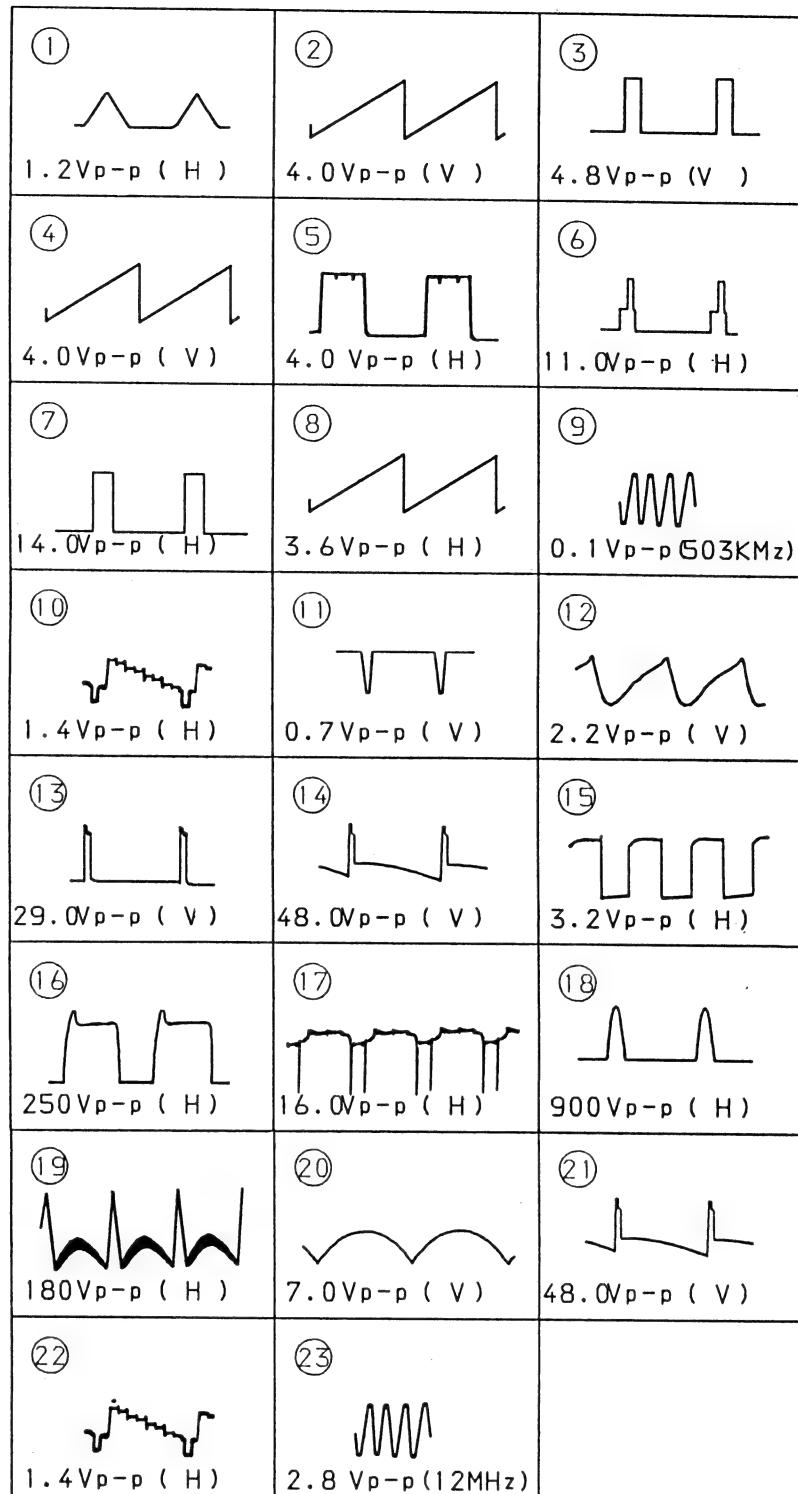
IC001	SDA20560	TUNING CTL
IC002	MC14051BCP	ON SCREEN DISPLAY
IC003	BA4558	AFT COMPARE
IC005	SDA2546	MY MEMORY
IC251	TDA2050	AUDIO OUT (L)
IC261	TDA2050	AUDIO OUT (R)
IC501	TEA2028B	DEFLECTION PROCESSOR
IC502	TDA8170	V OUT
IC601	TEA2260	PRIMARY SMRS CTL
IC604	TEA7605	+5V REG
IC608	TYA7812CT	+12V REG
Q001	DTC144EK	50/60Hz SW
Q002	DTC144EK	REG SW
Q003	2SA1037-K	SYNC SEPARATOR
Q004	2SA1037-K	SYNC SEPARATOR
Q005	DTC144EK	Y/C SW
Q006	DTC144EK	FRONT/REAR SW
Q007	2SC2412-K	MODE 2 SWITCH
Q008	2SC2412-K	MODE 1 SWITCH
Q009	2SC2412-K	MUTE SW
Q010	2SC2412-K	RESET
Q251	2SC2412-K	AUDIO MUTE
Q261	2SC2412-K	AUDIO MUTE
Q271	2SC2412-K	VOLTAGE DETECT
Q502	2SA1037-K	CONSTANT CURRENT SOURCE
Q505	2SD774	V CENT
Q506	2SB734	V CENT
Q507	2SA1037-K	CANAL +BLK
Q598	2SA1037-K	VIDEO AMP
Q601	2SB1357T114EF	STBY SW
Q602	SD1545	REG OUT
Q603	2SB1357T114EF	STBY SW
Q604	2SA1037-K	FAST ON/OFF
Q605	2SC2412-K	STBY SW
Q606	2SC2412-K	STBY SW
Q607	2SD2096-EF	+12V REG
Q608	2SC2412-K	STBY SW
Q609	2SD789-3	STBY SW
Q801	2SC2412-K	ABL AMP
Q804	BU508	H OUT
Q805	2SC2688	H DRIVER
Q003	ISS133	HUE CTL
Q005	MTZJ5.6B	PROT
Q006	MTZJ33A	VC VOLTAGE REGULATION
Q007	MTZJ3.9B	PLOT RESET
Q009	MTZJ5.6B	CLIPPING SYNC LEVEL
Q010	MTZJ6.2B	PROT
Q011	MTZJ6.2B	PROT
Q012	ISS133	PROT
Q013	MTZJ6.8C	PROT
Q271	MTZJ13B	VOLTAGE DETECT
Q272	ISS133	DECOUPLING MUTE AUDIO
Q501	ISS133	START
Q504	GP080PKG23	V PULSE OUT
Q506	DA204K	CURRENT (KV-E2521D ONLY)
Q508	ISS133	CANAL +BLK LEVEL
Q509	ISS133	V LIN
Q511	GP080PKG23	PROT
Q512	GP080PKG23	PROT
Q513	MTZJ4.7B	PROT
Q514	ISS133	PROT (KV-E2921D ONLY)
Q515	ISS133	PROT (KV-E2921D ONLY)
Q601	D4SB60L-F	AC RECT
Q602	RGP10PKG23	REF RECT
Q603	GP080PKG23	SMPS DRIVE 1
Q604	GP080PKG23	SMPS DRIVE 2
Q605	GP080PKG23	SMPS DRIVE 3
Q606	RGP10PKG23	+12V RECT
Q607	RGP10PKG23	REF RECT
Q608	ERC25-06S	PLUSE CLIPPER
Q609	MTZJ33A	FAST ON/OFF
Q610	CTU-12S	+14V RECT
Q611	ERD29-08J	+135VRECT
Q612	CTU-12S	+7V RECT
Q613	RGP15JPKG23	AF V RECT-1
Q614	RGP15JPKG23	AF V RECT-2
Q616	MTZJ6.2B	+12V REG
Q617	ISS133	PROT
Q618	MTZJ5.6B	+12V REF
Q619	MTZJ33A	FAST ON/OFF-2
Q620	DA204K	+12V REF
Q621	MTZJ33A	FAST ON/OFF-3
Q622	ISS133	PROT
Q623	ISS133	DECOUPLING STBY
Q624	ISS133	DECOUPLING DTBY
Q630	MTZJ15A	+12V REF
Q801	RGP10PKG23	+27V REF
Q802	RGP10PKG23	+200V REF
Q803	RGP02-17	G2 REF
Q804	GP080PKG23	H CENTER-1
Q805	GP080PKG23	H CENTER-2
Q806	ERC06-15S	H DAMPER-1
Q807	ERC06-15S	H DAMPER-2
Q808	ERD29-08J	PIN DAMPER



## BOARD

A20560	TUNING CTL
14051BCP	ON SCREEN DISPLAY
4558	AFT CONPARATORE
A2546	MY MEMORY
A2050	AUDIO OUT (L)
A2050	AUDIO OUT (R)
A2028B	DEFLECTION PROCESSOR
A8170	V OUT
A2260	PRIMARY SMRS CTL
A7605	+5V REG
A7812CT	+12V REG
C144EK	50/60Hz SW
A144EK	REG SW
A1037-K	SYNC SEPARATOR
A1037-K	SYNC SEPARATOR
C144EK	Y/C SW
C144EK	FRONT/REAR SW
C2412-K	MODE 2 SWITCH
C2412-K	MODE 1 SWITCH
C2412-K	MUTE SW
C2412-K	RESET
C2412-K	AUDIO MUTO
C2412-K	AUDIO MUTO
C2412-K	VOLTAGE DETECT
A1037-K	CONSTANT CURRENT SOURCE
D774	V CENT
B734	V CENT
A1037-K	CANAL +BLK
A1037-K	VIDEO AMP
B1357T114EF	STBY SW
1545	REG OUT
B1357T114EF	STBY SW
A1037-K	FAST ON/OFF
C2412-K	STBY SW
C2412-K	STBY SW
D2096-EF	+12V REG
C2412K	STBY SW
D789-3	STBY SW
C2412-K	ABL AMP
508	H OUT
C2688	H DRIVER
SS133	HUE CTL
TZJ5.6B	PROT
TZJ33A	VC VOLTAGE REGULATION
TZJ3.9B	PLOT RESET
TZJ5.6B	CLIPPING SYNC LEVEL
TZJ6.2B	PROT
TZJ6.2B	PROT
SS133	PROT
TZJ6.8C	PROT
TZJ13B	VOLTAGE DETECT
SS133	DECOUPLING MUTE AUDIO
SS133	START
P080PKG23	V PULSE OUT
A204K	CURRENT (KV-E2521D ONLY)
SS133	CANAL +BLK LEVEL
SS133	V LIN
P080PKG23	PROT
P080PKG23	PROT
TZJ4.7B	PROT
SS133	PROT (KV-E2921D ONLY)
SS133	PROT (KV-E2921D ONLY)
4SB60L-F	AC RECT
GP10GPKG23	REF RECT
P080PKG23	SMPS DRIVE 1
P080PKG23	SMPS DRIVE 2
P080PKG23	SMPS DRIVE 3
GP10GPKG23	+12V RECT
GP10GPKG23	REF RECT
RC25-06S	PLUSE CLIPPER
TZJ33A	FAST ON/OFF
TU-12S	+14V RECT
R029-08J	+135VRECT
TU-12S	+7V RECT
GP15JPKG23	AF V RECT-1
GP15JPKG23	AF V RECT-2
TZJ6.2B	+12V REG
SS133	PROT
TZJ5.6B	+12V REF
TZJ33A	FAST ON/OFF-2
A204K	+12V REF
TZJ33A	FAST ON/OFF-3
SS133	PROT
SS133	DECOUPLING STBY
SS133	DECOUPLING BTBY
TZJ15A	+12V REF
GP10GPKG23	+27V REF
GP10GPKG23	+200V REF
GP02-17	G2 REF
P080PKG23	H CENTER-1
P080PKG23	H CENTER-2
RC06-15S	H DAMPER-1
RC06-15S	H DAMPER-2
R029-08J	PJN DAMPER

## • WAVEFORMS D BOARD

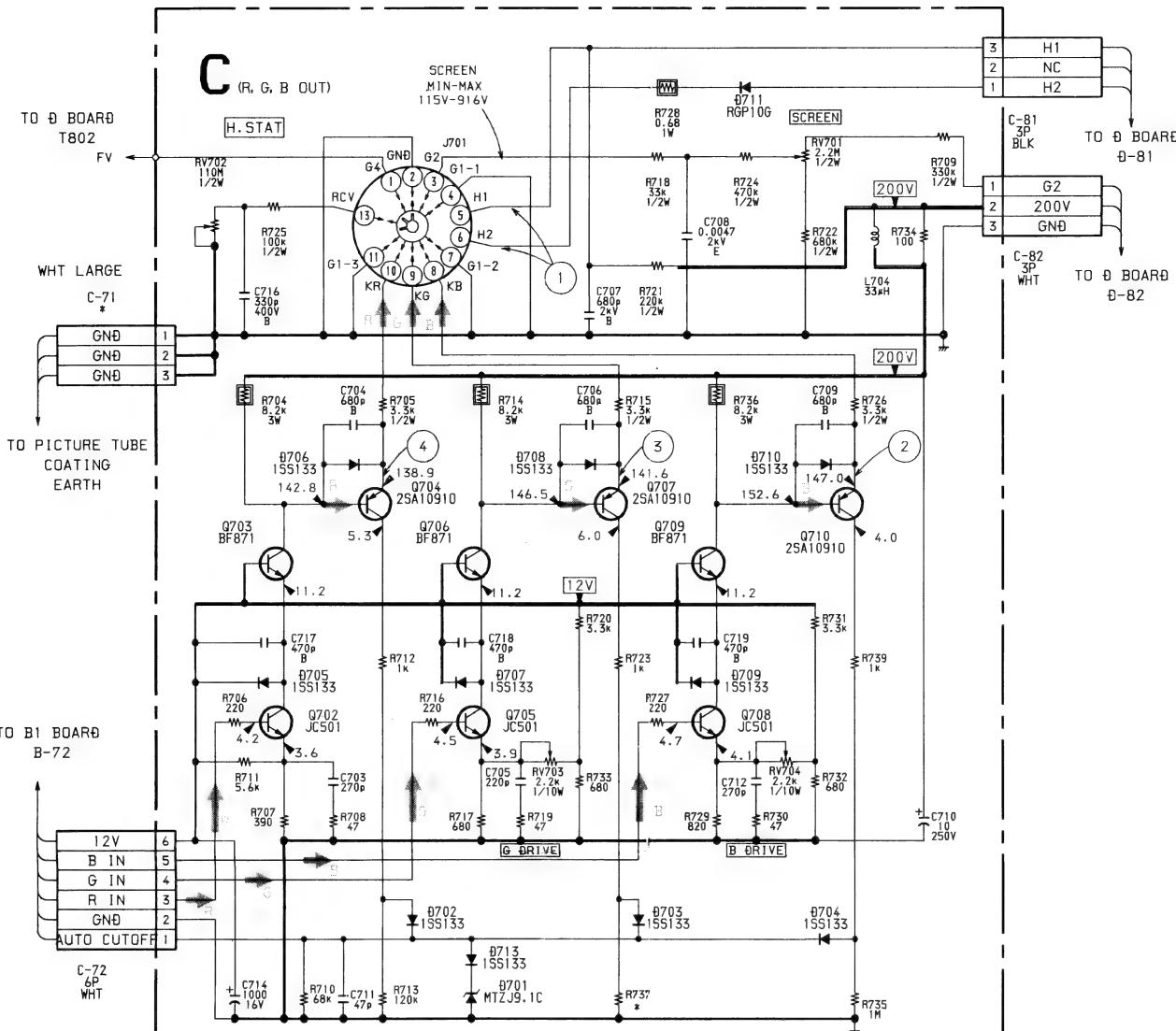


## D BOARD \*MARK

	KV-E2521D	KV-E2921D
C519	0.47MF	0.33MF
C815	1MF	0.82MF
C817	0.015MF	0.017MF
C821	680P 2K	470P 2K
D506	DA204K	-
D514	JW	ISS133
D515	-	ISS133
D-88	-	3P
JW202	-	X
JW203	X	-
JW204	X	-
JW205	-	X
JW206	X	-
JW207	X	-
JW229	X	-
JW216	X	-
L801	-	3.9MMH
R525	1K	-
R561	-	270K
R570	-	680
R607	4.7K	5.6K
R812	68K	51K
R5503	4.7	10
R5506	-	12K

— NOT MOUNTED  
X TO BE MOUNTED

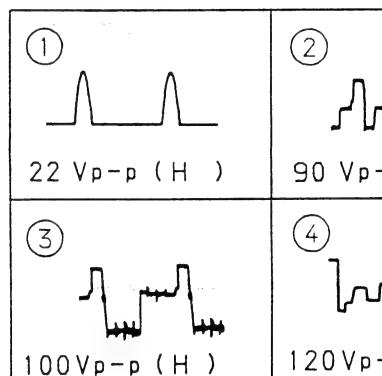
A



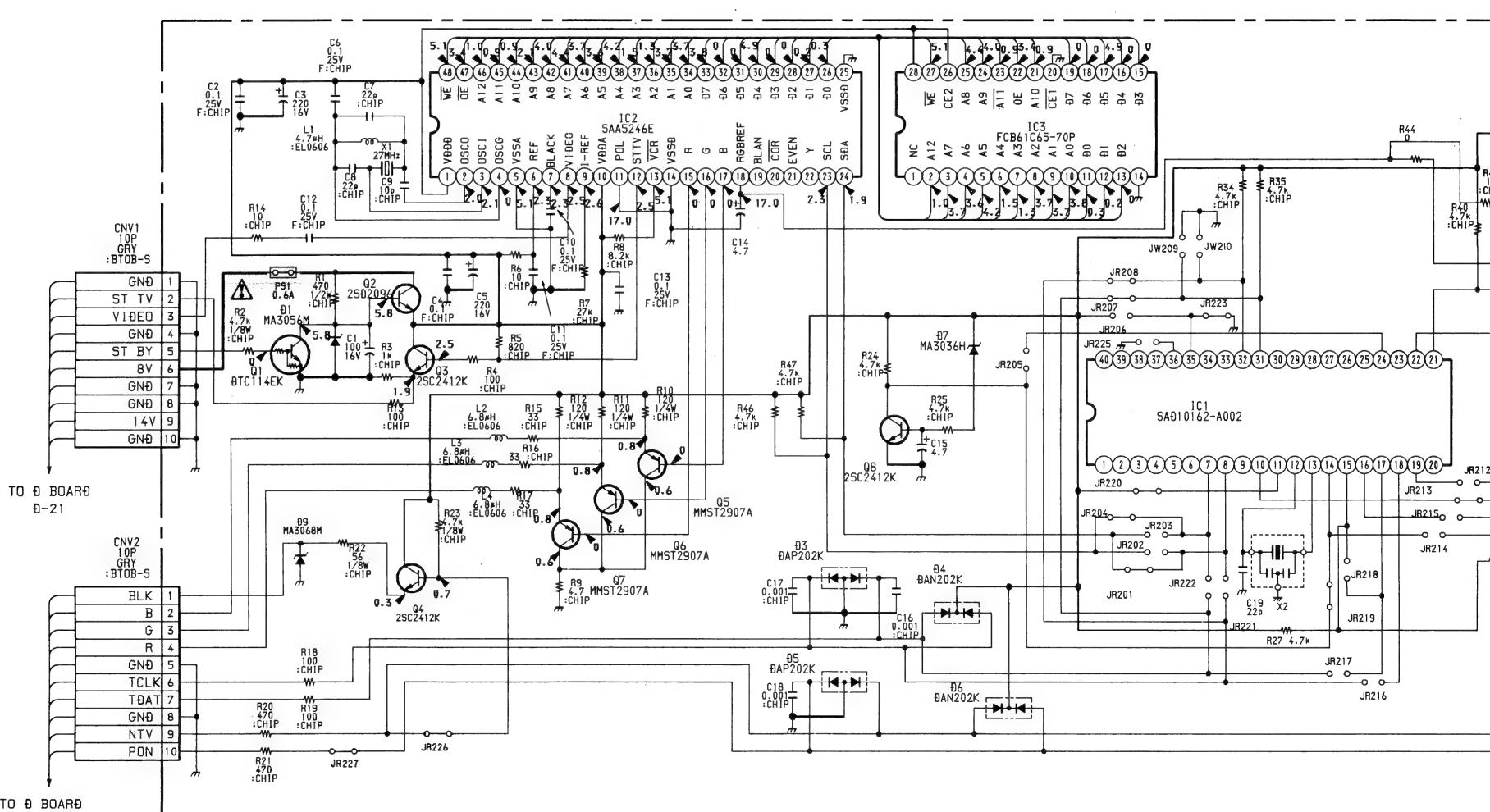
## C BOARD

Q702	JC501	R Ø
Q703	DF871	R Ø
Q704	2SA10910	ACØ
Q705	JC501	G Ø
Q706	BF871	G Ø
Q707	2SA10910	ACØ
Q708	JC501	B Ø
Q709	BF871	B Ø
Q710	2SA10910	ACØ
Ø701	MTZJ9.1C	PRO
Ø702	ISS133	PRO
Ø703	ISS133	PRO
Ø704	ISS133	PRO
Ø705	ISS133	PRO
Ø706	ISS133	PRO
Ø707	ISS133	PRO
Ø708	ISS133	PRO
Ø709	ISS133	PRO
Ø710	ISS133	PRO
Ø711	RGP10G	HEA
Ø713	ISS133	PRO

## • WAVEFORMS C BOARD



G



M

## V BOARD

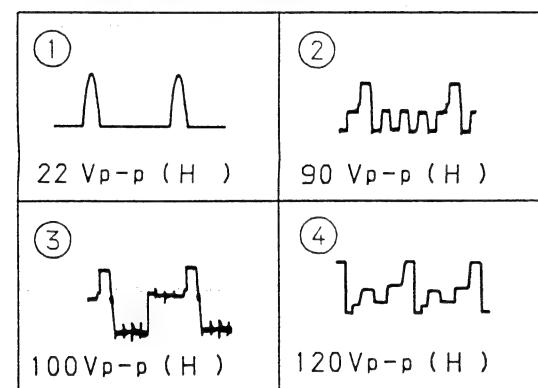
IC1	S8A20162-A002	MICRO-CONT
IC2	SAA5246E	IVT
IC3	FCB61C65-70P	STATIC-RAM
Q1	ØTC114EK	STAND BY
Q2	ØTC2096	5V REG
Q3	2SC2412K	SYNC BUFFER
Q4	2SC2712K	BLK OUT
Q5	MMST2907A	B OUT
Q6	MMST2907A	G OUT
Q7	MMST2907A	R OUT
Q8	2SC2412K	PON SW
Ø1	MA3056M	5V REG
Ø3	ØAP202K	PROTECT
Ø4	ØAN202K	PROTECT
Ø5	ØAN202K	PROTECT
Ø6	ØAN202K	PROTECT
Ø7	MA3036H	PROTECT
Ø9	MA3068M	PROTECT

N

C BOARD

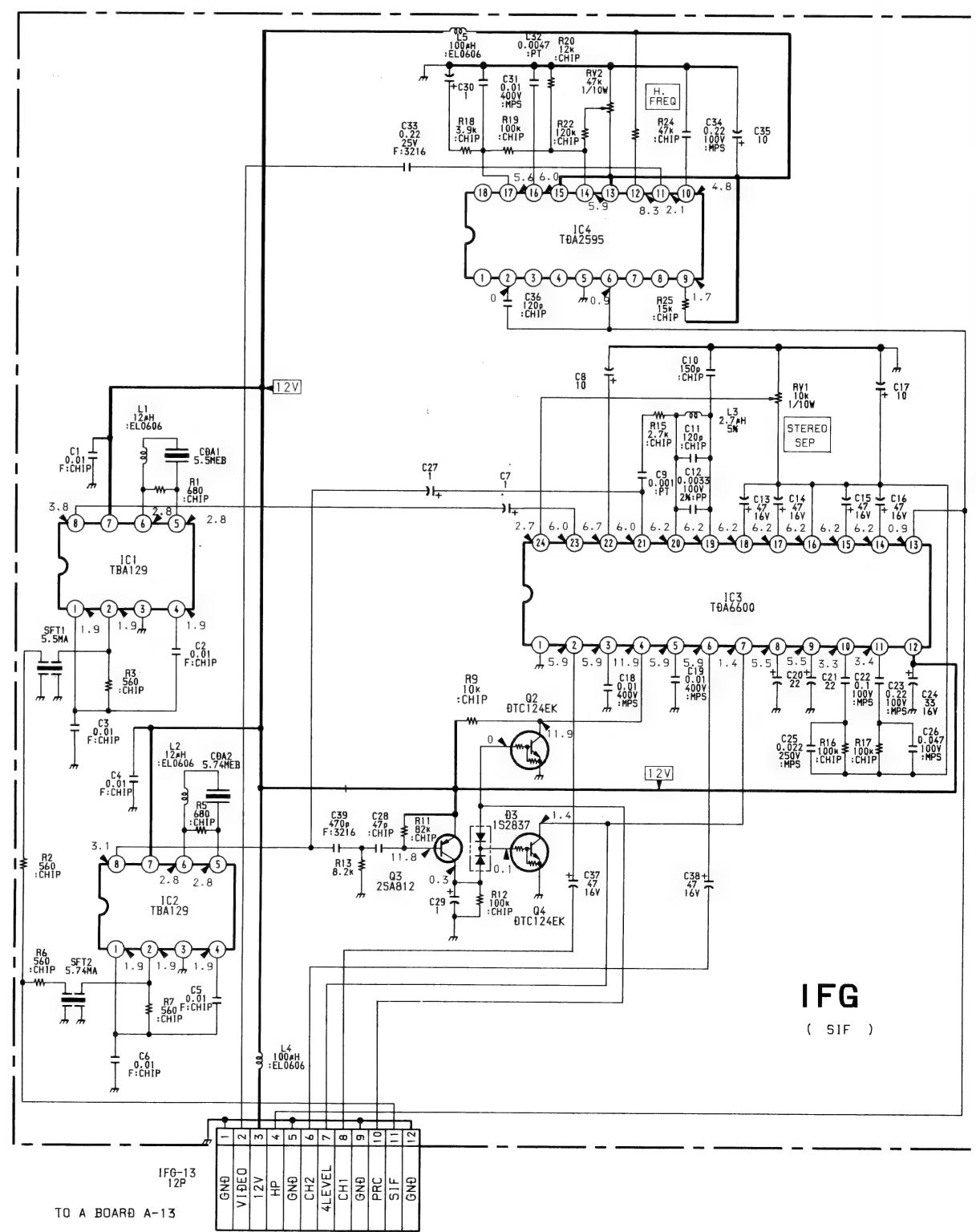
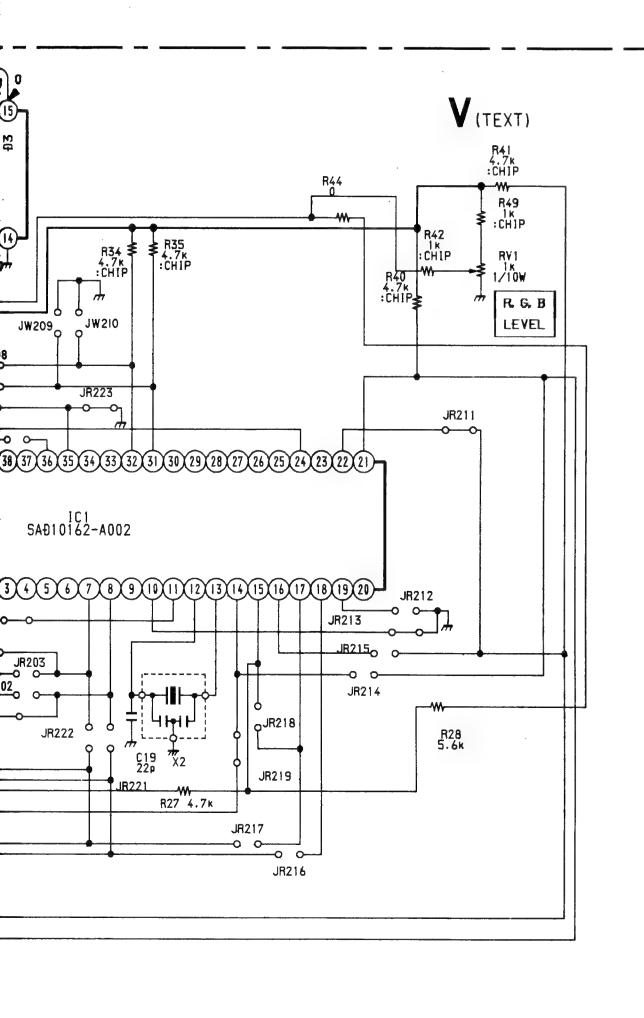
Q702	JC501	R DRIVE
Q703	DF871	R OUT
Q704	2SA10910	ACO MEASURING
Q705	JC501	G DRIVE
Q706	BF871	G OUT
Q707	2SA10910	ACO MEASURING
Q708	JC501	B DRIVE
Q709	BF871	B OUT
Q710	2SA10910	ACO MEASURING
Q701	MTZJ9.1C	PROTECT
Q702	ISS133	PROTECT
Q703	ISS133	PROTECT
Q704	ISS133	PROTECT
Q705	ISS133	PROTECT
Q706	ISS133	PROTECT
Q707	ISS133	PROTECT
Q708	ISS133	PROTECT
Q709	ISS133	PROTECT
Q710	ISS133	PROTECT
Q711	RGP10G	HEATING VOLTAGE REC
Q713	ISS133	PROTECT

- WAVEFORMS C BOARD

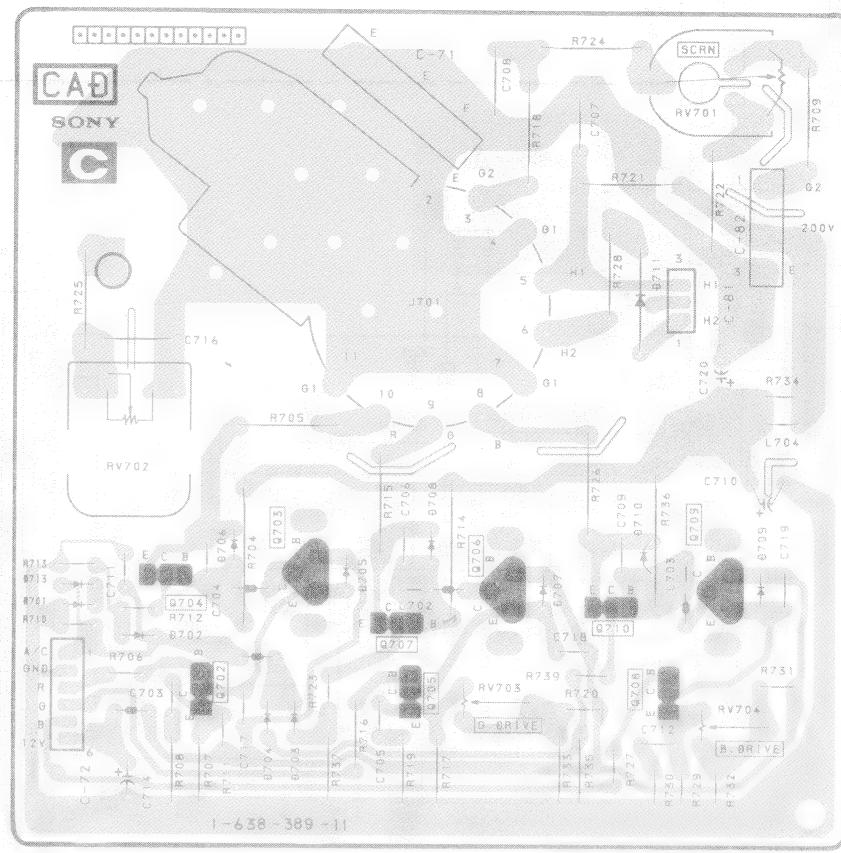


C BOARD \*MARK

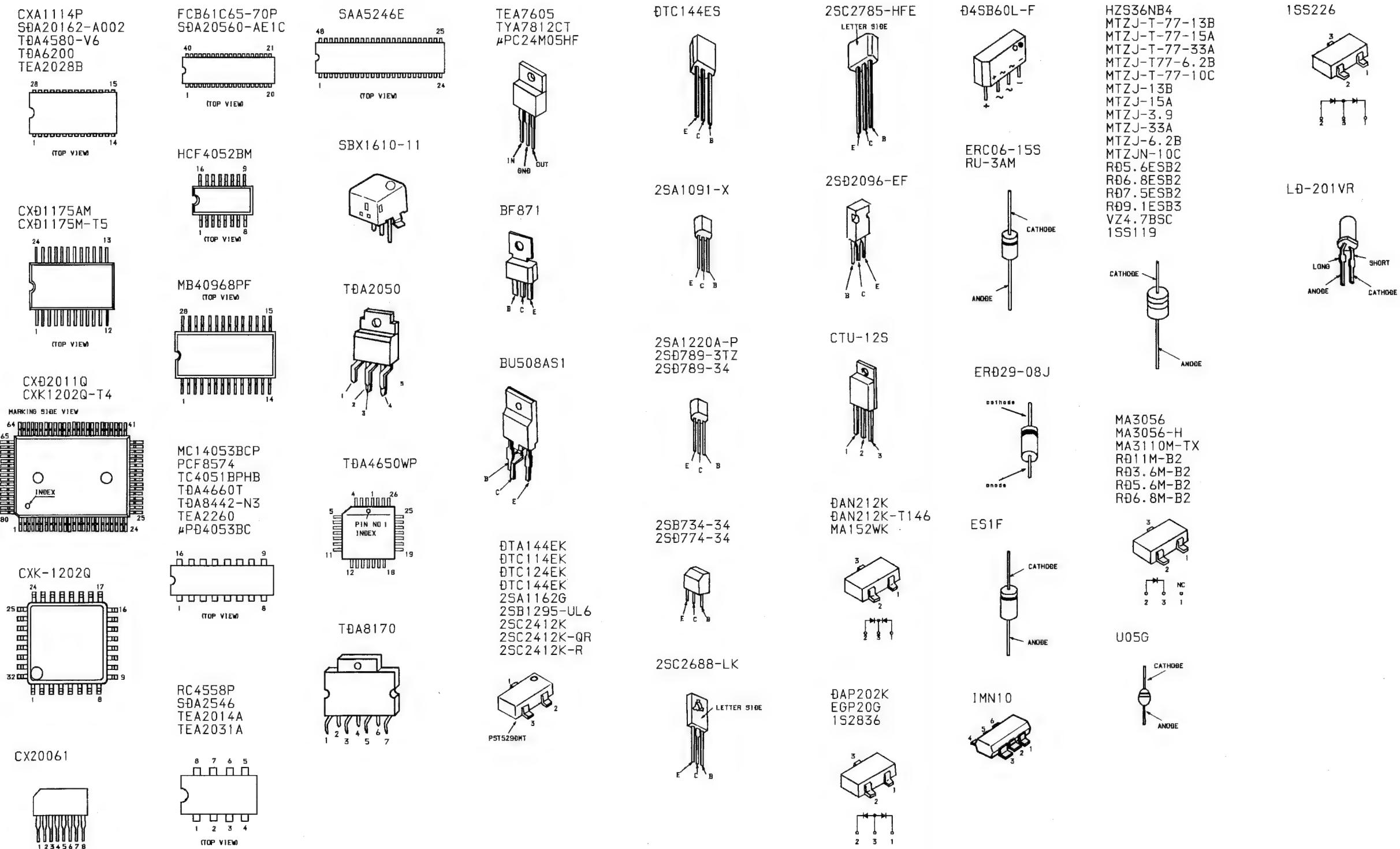
	KV-E2521Ø	KV-E2921Ø
C-71	2P	3P
R737	820K	470K



—C BOARD—



#### 5.4. SEMICONDUCTORS



## SECTION 6

# EXPLODED VIEWS

NOTE:

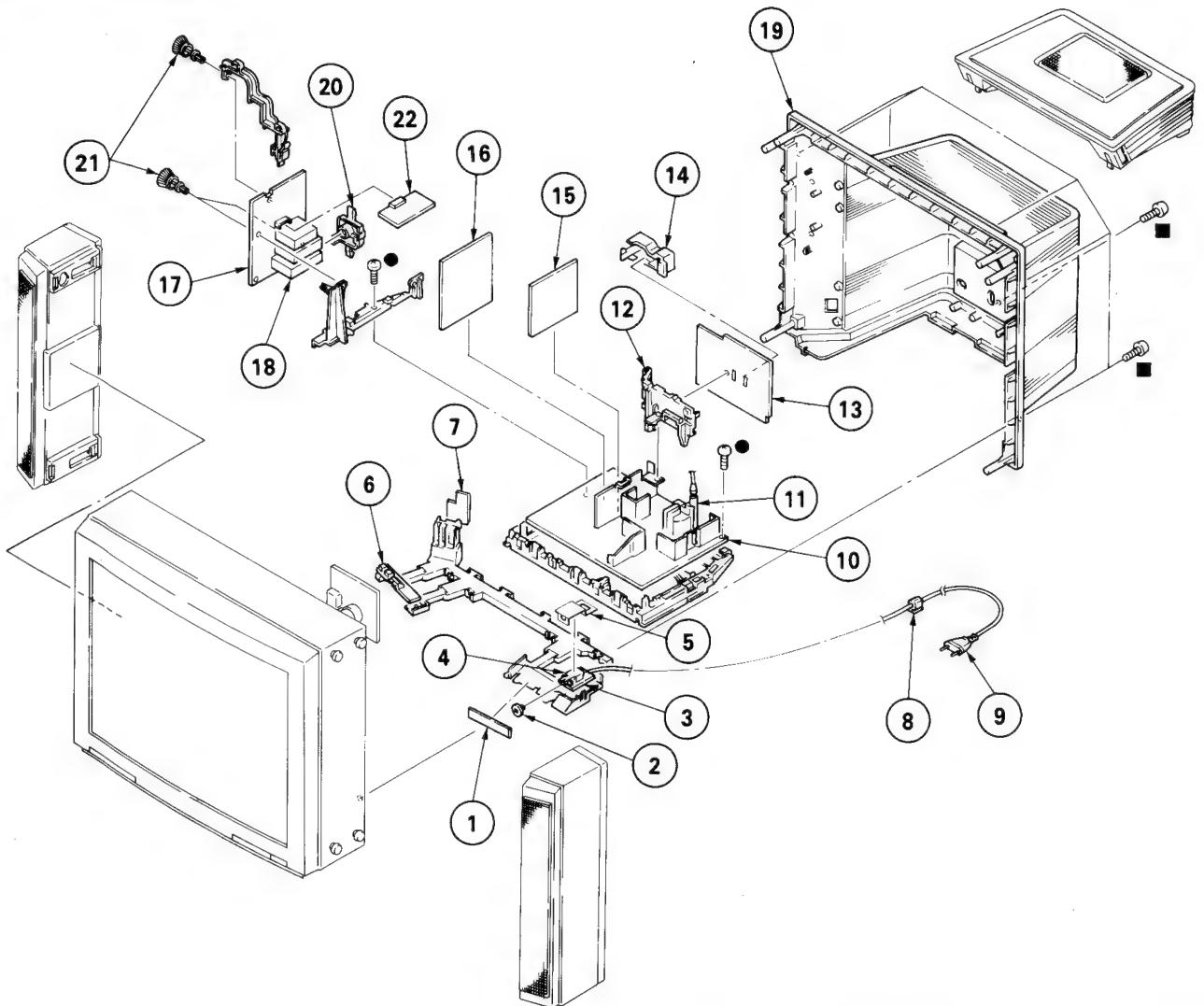
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

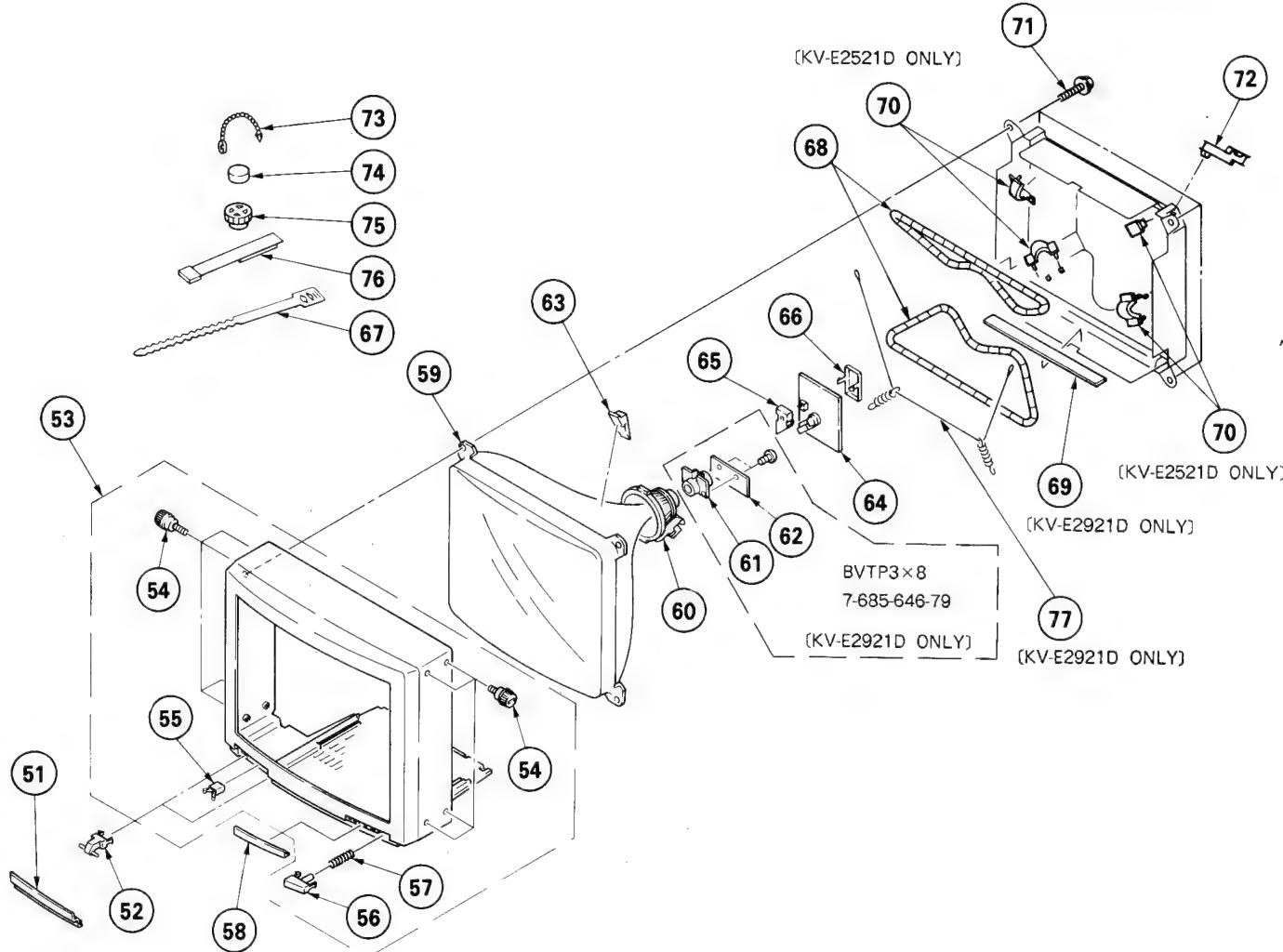
The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

**(1) CHASSIS**

● : BVTP3×12 7-685-648-79  
■ : BVTP4×16 7-685-663-79



(2) PICTURE TUBE

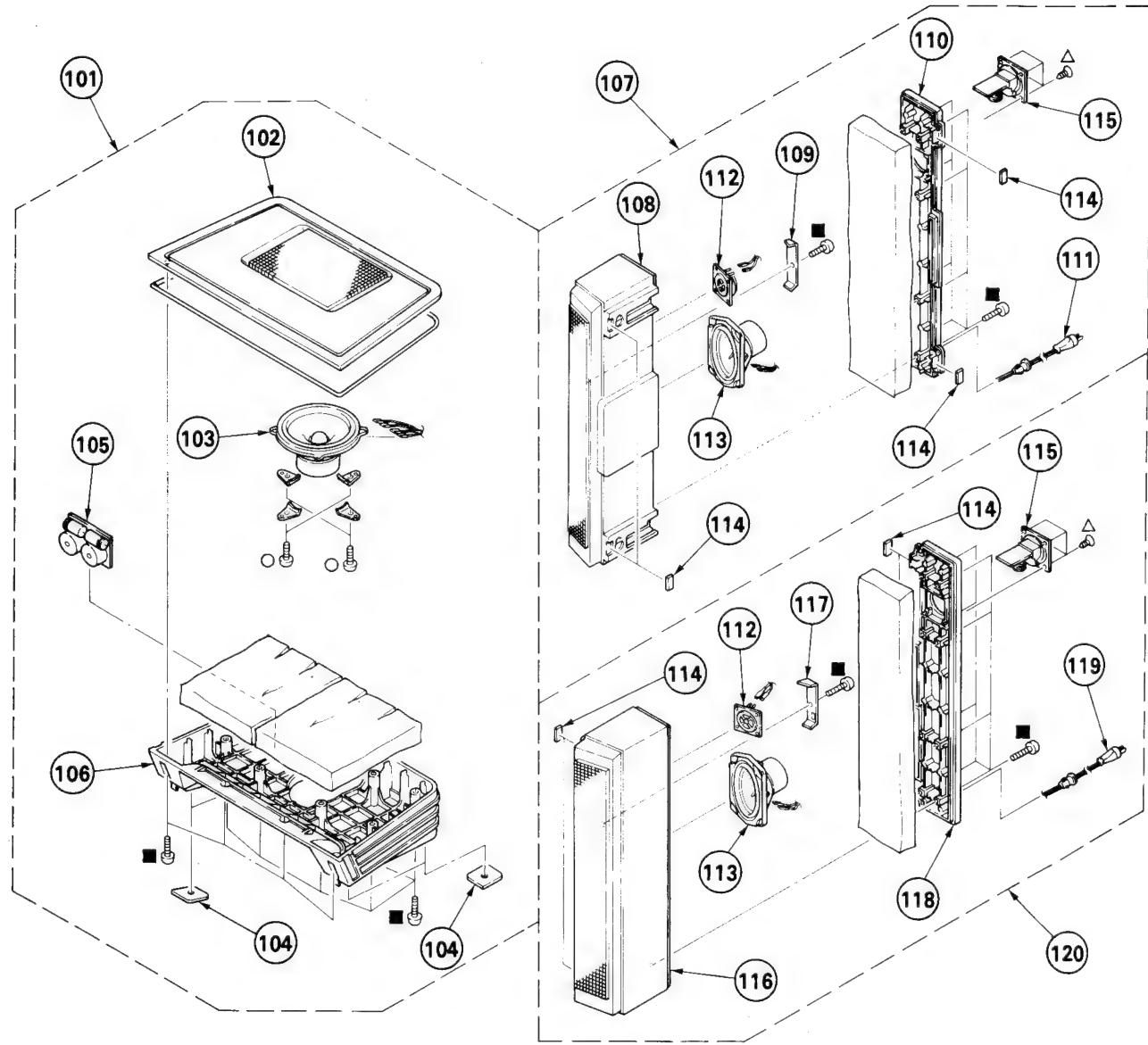


REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	*1-638-392-11	H2 BOARD		12	*4-386-624-11	BRACKET, J	
2	4-201-011-01	CAP, SWITCH (KV-E2521D ONLY)		13	A-1651-018-A	J1 BOARD, COMPLETE (KV-E2521D ONLY)	
	4-386-611-01	COVER, SWITCH (KV-E2921D ONLY)			A-1651-020-A	J1 BOARD, COMPLETE (KV-E2921D ONLY)	
3	*1-638-390-11	F BOARD		14	4-200-014-01	BRACKET, TERMINAL	
4	▲ 1-571-433-11	SWITCH, PUSH (AC POWER)		15	A-1645-013-A	V BOARD, COMPLETE	
5	4-200-274-01	COVER, POWER SWITCH		16	A-1621-013-A	B1 BOARD, COMPLETE (KV-E2521D ONLY)	
6	*1-638-391-11	H1 BOARD			A-1621-015-A	B1 BOARD, COMPLETE (KV-E2921D ONLY)	
7	*1-638-393-11	J2 BOARD		17	A-1632-022-A	A BOARD, COMPLETE	
8	▲ 4-389-201-02	HOLDER, AC CORD		18	▲ 1-465-301-11	TUNER, ET (UV-816(PLL))	
9	▲ 1-590-501-11	CORD, POWER(WITH NOISE FILTER)		19	4-201-017-02	COVER, REAR (KV-E2521D ONLY)	
10	A-1642-031-A	D BOARD, COMPLETE (KV-E2521D ONLY)			4-200-026-04	COVER, REAR (KV-E2921D ONLY)	
	A-1642-032-A	D BOARD, COMPLETE (KV-E2921D ONLY)		20	*4-386-617-01	HOLDER, TERMINAL	
11	▲ 1-439-416-11	TRANSFORMER ASSY, FLYBACK (UX-1600)		21	4-386-618-01	RIVET, T TYPE	
				22	A-1654-004-A	IFG BOARD, COMPLETE	

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
51	X-4201-006-5	DOOR ASSY, CONTROL (KV-E2521D ONLY)		62	*1-634-193-11	VM BOARD (KV-E2921D ONLY)	
	X-4200-001-5	LID ASSY, CONTROL (KV-E2921D ONLY)		63	3-704-495-01	SPACER, DY	
52	3-703-035-11	SHAFT, LID		64	*A-1638-011-A	C BOARD, COMPLETE (KV-E2521D ONLY)	
53	X-4201-005-5	CABINET ASSY (WITH BEZEL ASSY) 54-57 (KV-E2521D ONLY)		65	*A-1638-013-A	C BOARD, COMPLETE (KV-E2921D ONLY)	
	X-4200-008-8	CABINET ASSY (WITH BEZEL ASSY) 54-57 (KV-E2921D ONLY)		66	*4-379-167-01	COVER (MAIN), CV	
				67	*4-379-160-01	COVER (REAR LID), CV	
54	X-4374-104-1	SCREW (B) ASSY, ORNAMENTAL		68	A-1-460-091-11	BAND, BINDING	
55	4-392-036-01	CATCHER, PUSH			A-1-426-398-11	COIL, DEGAUSS (KV-E2521D ONLY)	
56	4-200-013-01	BUTTON, POWER		69	4-389-291-01	COIL, DEMAGNETIZATION (KV-E2921D ONLY)	
57	4-329-112-21	SPRING		70	*4-385-916-01	CUSHION (KV-E2921D ONLY)	
58	4-200-017-02	WINDOW, ORNAMENTAL		71	4-373-263-01	HOLDER (D) (KV-E2521D ONLY)	
59	A-8-733-224-05	PICTURE TUBE (A59JWC60X) (KV-E2521D ONLY)		72	*4-387-216-01	SCREW (M), PT	
	A-8-733-824-05	PICTURE TUBE (A68JYK60X) (KV-E2921D ONLY)		73	4-308-870-00	HOLDER, LEAD	
60	A-1-451-311-21	DEFLECTION YOKE (Y25FXA) (KV-E2521D ONLY)		74	1-452-032-00	CLIP, LEAD WIRE	
	A-1-451-313-21	DEFLECTION YOKE (Y29FXA) (KV-E2921D ONLY)		75	1-452-094-00	MAGNET, DISK; 10MM $\phi$	
61	A-1-452-509-42	NECK ASSY, PICTURE TUBE (NA-308) (KV-E2921D ONLY)		76	X-4387-214-1	MAGNET, ROTATABLE DISK; 15MM $\phi$	
				77	4-369-318-00	PERMALLOY ASSY, CORRECTION	
						SPRING, TENSION (KV-E2921D ONLY)	

**(3) SPEAKER**

■ : BVTP4×16 7-685-663-79  
 ○ : BVTP4×10 7-685-660-79  
 △ : KTP3×12 7-685-248-19



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK	
101	*A-1678-001-A	BOX ASSY, WOOFER		102-106	111	1-575-025-11	CORD, SPEAKER (WITH PLUG)	
102	X-4200-004-2	BOARD ASSY, BAFFLE			112	1-544-203-11	SPEAKER	
103	1-544-192-11	SPEAKER			113	1-544-204-11	SPEAKER	
104	4-200-009-01	CUSHION, FOOT			114	4-200-006-01	CUSHION, FOOT	
105	1-236-549-11	NETWORK, DIVIDING			115	1-236-510-21	NETWORK, DIVIDING	
106	4-200-027-01	BOX, WOOFER			116	X-4201-004-1	BOX ASSY (RIGHT), SIDE (KV-E2521D ONLY)	
107	*A-1678-012-A	BOX ASSY (LEFT), SPEAKER	108-115			X-4200-005-1	BOX ASSY (R), SIDE (KV-E2921D ONLY)	
			(KV-E2521D ONLY)		117	*4-200-004-02	BRACKET (R), SPEAKER	
	*A-1678-005-A	BOX ASSY (LEFT), SPEAKER	108-115		118	4-201-006-01	PANEL (RIGHT), REAR (KV-E2521D ONLY)	
			(KV-E2921D ONLY)			4-200-029-01	PANEL (R), REAR (KV-E2921D ONLY)	
108	X-4201-003-1	BOX ASSY (LEFT), SIDE (KV-E2521D ONLY)		119	1-575-024-11	CORD, SPEAKER (WITH PLUG)		
	X-4200-006-1	BOX ASSY (L), SIDE (KV-E2921D ONLY)		120	*A-1678-010-A	BOX ASSY (RIGHT), SPEAKER	112-119 (KV-E2521D ONLY)	
109	*4-200-003-02	BRACKET (L), SPEAKER						
110	4-201-007-01	PANEL (LEFT), REAR (KV-E2521D ONLY)				*A-1678-003-A	BOX ASSY (RIGHT), SPEAKER	112-119 (KV-E2921D ONLY)
	4-200-030-01	PANEL (L), REAR (KV-E2921D ONLY)						

## SECTION 7 ELECTRICAL PARTS LIST

B1

NOTE.

The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

When indicating parts by reference number, please include the board name.

## CAPACITORS

COLLS

### • CAPACITORS

### COILS

## RESISTORS

- All resistors are in ohms
- F : nonflammable

The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

B1

# B1

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
Q329	8-729-216-22	TRANSISTOR 2SA1162-G		R312	1-216-019-00	METAL GLAZE 56	5% 1/10W
Q330	8-729-901-78	TRANSISTOR 2SC2412K-R		R313	1-216-019-00	METAL GLAZE 56	5% 1/10W
Q331	8-729-216-22	TRANSISTOR 2SA1162-G		R314	1-216-019-00	METAL GLAZE 56	5% 1/10W
Q332	8-729-216-22	TRANSISTOR 2SA1162-G		R315	1-216-023-00	METAL GLAZE 82	5% 1/10W
Q333	8-729-901-00	TRANSISTOR DTC124EK		R316	1-216-081-00	METAL GLAZE 22K	5% 1/10W
Q334	8-729-901-00	TRANSISTOR DTC124EK		R317	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q335	8-729-901-78	TRANSISTOR 2SC2412K-R		R318	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q336	8-729-901-78	TRANSISTOR 2SC2412K-R		R319	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q337	8-729-901-78	TRANSISTOR 2SC2412K-R		R320	1-216-198-00	METAL GLAZE 1K	5% 1/8W
Q338	8-729-216-22	TRANSISTOR 2SA1162-G		R321	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q339	8-729-901-78	TRANSISTOR 2SC2412K-R		R322	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q340	8-729-901-78	TRANSISTOR 2SC2412K-R		R323	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
Q341	8-729-901-78	TRANSISTOR 2SC2412K-R		R324	1-216-049-00	METAL GLAZE 1K	5% 1/10W
Q342	8-729-901-78	TRANSISTOR 2SC2412K-R		R325	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q343	8-729-901-78	TRANSISTOR 2SC2412K-R		R326	1-216-009-00	METAL GLAZE 22	5% 1/10W
Q344	8-729-901-78	TRANSISTOR 2SC2412K-R		R327	1-216-009-00	METAL GLAZE 22	5% 1/10W
Q345	8-729-901-78	TRANSISTOR 2SC2412K-R		R328	1-216-009-00	METAL GLAZE 22	5% 1/10W
Q346	8-729-901-78	TRANSISTOR 2SC2412K-R		R329	1-216-031-00	METAL GLAZE 180	5% 1/10W
Q347	8-729-901-78	TRANSISTOR 2SC2412K-R		R330	1-216-031-00	METAL GLAZE 180	5% 1/10W
Q348	8-729-901-00	TRANSISTOR DTC124EK		R331	1-216-031-00	METAL GLAZE 180	5% 1/10W
Q350	8-729-901-78	TRANSISTOR 2SC2412K-R		R332	1-216-182-00	METAL GLAZE 220	5% 1/8W
Q352	8-729-216-22	TRANSISTOR 2SA1162-G		R333	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q353	8-729-901-78	TRANSISTOR 2SC2412K-R		R335	1-216-101-00	METAL GLAZE 150K	5% 1/10W
Q354	8-729-901-78	TRANSISTOR 2SC2412K-R		R336	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q355	8-729-901-78	TRANSISTOR 2SC2412K-R		R337	1-216-093-00	METAL GLAZE 68K	5% 1/10W
Q356	8-729-216-22	TRANSISTOR 2SA1162-G		R338	1-216-085-00	METAL GLAZE 33K	5% 1/10W
Q357	8-729-216-22	TRANSISTOR 2SA1162-G		R339	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
Q358	8-729-901-78	TRANSISTOR 2SC2412K-R		R340	1-216-103-00	METAL GLAZE 180K	5% 1/10W
Q359	8-729-216-22	TRANSISTOR 2SA1162-G		R341	1-216-115-00	METAL GLAZE 560K	5% 1/10W
Q360	8-729-901-78	TRANSISTOR 2SC2412K-R		R342	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
Q361	8-729-901-78	TRANSISTOR 2SC2412K-R		R343	1-216-043-00	METAL GLAZE 560	5% 1/10W
Q362	8-729-901-78	TRANSISTOR 2SC2412K-R			1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
Q363	8-729-901-78	TRANSISTOR 2SC2412K-R		R344	1-216-089-00	METAL GLAZE 47K	5% 1/10W
Q364	8-729-216-22	TRANSISTOR 2SA1162-G			1-216-097-00	METAL GLAZE 100K	5% 1/10W
Q365	8-729-216-22	TRANSISTOR 2SA1162-G		R345	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q366	8-729-901-78	TRANSISTOR 2SC2412K-R		R346	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q367	8-729-901-78	TRANSISTOR 2SC2412K-R		R347	1-216-121-00	METAL GLAZE 1M	5% 1/10W
Q368	8-729-901-78	TRANSISTOR 2SC2412K-R		R348	1-216-001-00	METAL GLAZE 10	5% 1/10W
Q369	8-729-901-78	TRANSISTOR 2SC2412K-R		R349	1-216-001-00	METAL GLAZE 10	5% 1/10W
Q370	8-729-901-78	TRANSISTOR 2SC2412K-R		R350	1-216-184-00	METAL GLAZE 270	5% 1/8W
Q371	8-729-901-78	TRANSISTOR 2SC2412K-R		R351	1-216-184-00	METAL GLAZE 270	5% 1/8W
Q372	8-729-901-78	TRANSISTOR 2SC2412K-R		R352	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
Q373	8-729-901-00	TRANSISTOR DTC124EK		R353	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q1301	8-729-901-00	TRANSISTOR DTC124EK		R354	1-216-037-00	METAL GLAZE 330	5% 1/10W
Q1302	8-729-901-78	TRANSISTOR 2SC2412K-R		R355	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q1303	8-729-901-00	TRANSISTOR DTC124EK		R356	1-216-049-00	METAL GLAZE 1K	5% 1/10W
<RESISTOR>							
JR302	1-216-295-00	METAL GLAZE 0 5%	1/10W	R357	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
JR304	1-216-296-00	METAL GLAZE 0 5%	1/8W	R358	1-216-037-00	METAL GLAZE 330	5% 1/10W
JR305	1-216-295-00	METAL GLAZE 0 5%	1/10W	R359	1-216-041-00	METAL GLAZE 470	5% 1/10W
JR390	1-216-295-00	METAL GLAZE 0 5%	1/10W	R361	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
JR391	1-216-295-00	METAL GLAZE 0 5%	1/10W	R362	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R301	1-216-033-00	METAL GLAZE 220 5%	1/10W	R363	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R302	1-216-033-00	METAL GLAZE 220 5%	1/10W	R364	1-216-033-00	METAL GLAZE 220	5% 1/10W
R303	1-216-033-00	METAL GLAZE 220 5%	1/10W	R365	1-216-035-00	METAL GLAZE 270	5% 1/10W
R304	1-216-081-00	METAL GLAZE 22K 5%	1/10W	R366	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R305	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R367	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R306	1-216-035-00	METAL GLAZE 270 5%	1/10W	R368	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R307	1-216-097-00	METAL GLAZE 100K 5%	1/10W	R369	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R309	1-216-025-00	METAL GLAZE 100 5%	1/10W	R370	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R310	1-216-025-00	METAL GLAZE 100 5%	1/10W	R371	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R311	1-216-025-00	METAL GLAZE 100 5%	1/10W	R372	1-216-033-00	METAL GLAZE 220	5% 1/10W
				R373	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK		
R374	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1339	1-216-039-00	METAL GLAZE	390 5% 1/10W		
R375	1-216-043-00	METAL GLAZE	560 5% 1/10W	R1340	1-216-025-00	METAL GLAZE	100 5% 1/10W		
R376	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1341	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W		
R377	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1342	1-216-025-00	METAL GLAZE	100 5% 1/10W		
R378	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1343	1-216-043-00	METAL GLAZE	560 5% 1/10W		
R379	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1344	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W		
R380	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1345	1-216-077-00	METAL GLAZE	15K 5% 1/10W		
R381	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1346	1-216-025-00	METAL GLAZE	100 5% 1/10W		
R382	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R1347	1-216-025-00	METAL GLAZE	100 5% 1/10W		
R383	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1348	1-216-085-00	METAL GLAZE	33K 5% 1/10W		
R384	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R1349	1-216-075-00	METAL GLAZE	12K 5% 1/10W		
R385	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1350	1-216-039-00	METAL GLAZE	390 5% 1/10W		
R386	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R1351	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W		
R387	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1352	1-216-041-00	METAL GLAZE	470 5% 1/10W		
R388	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R1353	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W		
R389	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1354	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W		
R390	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1355	1-216-045-00	METAL GLAZE	680 5% 1/10W		
R391	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1356	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W		
R392	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1357	1-216-049-00	METAL GLAZE	1K 5% 1/10W		
R393	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1358	1-216-081-00	METAL GLAZE	22K 5% 1/10W		
R394	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1359	1-216-049-00	METAL GLAZE	1K 5% 1/10W		
R395	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1360	1-216-049-00	METAL GLAZE	1K 5% 1/10W		
R396	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1361	1-216-049-00	METAL GLAZE	1K 5% 1/10W		
R397	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R1362	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W		
R398	1-216-035-00	METAL GLAZE	270 5% 1/10W	R1363	1-216-039-00	METAL GLAZE	390 5% 1/10W		
R399	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1364	1-216-049-00	METAL GLAZE	1K 5% 1/10W		
R403	1-216-035-00	METAL GLAZE	270 5% 1/10W	R1365	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W		
R1301	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1366	1-216-083-00	METAL GLAZE	27K 5% 1/10W		
R1302	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1367	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W		
R1303	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1368	1-216-033-00	METAL GLAZE	220 5% 1/10W		
R1305	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R1369	1-216-031-00	METAL GLAZE	180 5% 1/10W		
R1308	1-216-295-00	METAL GLAZE	0 5% 1/10W	(KV-E2521D ONLY)		R1370	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	(KV-E2921D ONLY)		R1371	1-216-031-00	METAL GLAZE	180 5% 1/10W
				(KV-E2921D ONLY)		R1372	1-216-047-00	METAL GLAZE	820 5% 1/10W
R1309	1-216-023-00	METAL GLAZE	82 5% 1/10W	R1373	1-216-035-00	METAL GLAZE	270 5% 1/10W		
R1310	1-216-047-00	METAL GLAZE	820 5% 1/10W	R1374	1-216-202-00	METAL GLAZE	1.5K 5% 1/8W		
R1311	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1375	1-216-208-00	METAL GLAZE	2.7K 5% 1/8W		
R1312	1-216-045-00	METAL GLAZE	680 5% 1/10W	R1376	1-216-748-11	METAL GLAZE	39K 5% 1/10W		
R1313	1-216-043-00	METAL GLAZE	560 5% 1/10W	R1377	1-216-748-11	METAL GLAZE	39K 5% 1/10W		
R1314	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1378	1-216-748-11	METAL GLAZE	39K 5% 1/10W		
R1315	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1379	1-216-748-11	METAL GLAZE	39K 5% 1/10W		
R1316	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1380	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W		
R1319	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1381	1-216-033-00	METAL GLAZE	220 5% 1/10W		
R1320	1-216-641-11	METAL CHIP	390 0.50% 1/10W	R1382	1-216-089-00	METAL GLAZE	47K 5% 1/10W		
R1321	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1383	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W		
R1322	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1384	1-216-089-00	METAL GLAZE	47K 5% 1/10W		
R1323	1-216-643-11	METAL CHIP	470 0.50% 1/10W	R1385	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W		
R1324	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1386	1-216-047-00	METAL GLAZE	820 5% 1/10W		
R1325	1-216-037-00	METAL GLAZE	330 5% 1/10W	R1387	1-216-031-00	METAL GLAZE	180 5% 1/10W		
R1326	1-216-045-00	METAL GLAZE	680 5% 1/10W	R1388	1-216-073-00	METAL GLAZE	10K 5% 1/10W		
R1327	1-216-029-00	METAL GLAZE	150 5% 1/10W	R1389	1-216-073-00	METAL GLAZE	10K 5% 1/10W		
R1328	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1390	1-216-093-00	METAL GLAZE	68K 5% 1/10W		
R1329	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1391	1-216-208-00	METAL GLAZE	2.7K 5% 1/8W		
R1330	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1392	1-216-047-00	METAL GLAZE	820 5% 1/10W		
R1331	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1393	1-216-047-00	METAL GLAZE	820 5% 1/10W		
R1332	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1394	1-216-081-00	METAL GLAZE	22K 5% 1/10W		
R1333	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R1395	1-216-081-00	METAL GLAZE	22K 5% 1/10W		
R1334	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1396	1-216-073-00	METAL GLAZE	10K 5% 1/10W		
R1335	1-216-043-00	METAL GLAZE	560 5% 1/10W	R1397	1-216-073-00	METAL GLAZE	10K 5% 1/10W		
R1336	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1398	1-216-001-00	METAL GLAZE	10 5% 1/10W		
R1337	1-216-657-11	METAL CHIP	1.8K 0.50% 1/10W	R1399	1-216-029-00	METAL GLAZE	150 5% 1/10W		
R1338	1-216-085-00	METAL GLAZE	33K 5% 1/10W						

**B1 F A C**

The components identified by shading and mark **A** are critical for safety.  
Replace only with part number specified.

REF. NO. PART NO. DESCRIPTION

REF. NO. PART NO. DESCRIPTION

REMARK

<VARIABLE RESISTOR>

RV301 1-238-012-11 RES, ADJ, CARBON 1K

<CRYSTAL>

X301 1-567-307-11 OSCILLATOR, CRYSTAL  
X302 1-567-131-00 OSCILLATOR, CRYSTAL

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\*1-638-390-11 F BOARD  
\*\*\*\*\*

\*1-580-690-11 PIN, CONNECTOR (PC BOARD) 4P  
\*4-341-752-01 EYELET

<FUSE>

F1601A 1-532-504-31 FUSE 4A/250V  
1-533-230-11 HOLDER, FUSE; F1601

<SWITCH>

S1701A 1-571-433-11 SWITCH, PUSH (AC POWER)

\*\*\*\*\*

A-1632-022-A A BOARD, COMPLETE  
\*\*\*\*\*

\*1-560-290-00 PLUG, CONNECTOR (2.5MM PITCH)  
\*1-564-881-11 PLUG, CONNECTOR 4P  
\*1-564-886-11 PLUG, CONNECTOR 9P  
\*1-565-393-11 CONNECTOR, BOARD TO BOARD  
\*1-565-503-11 CONNECTOR, BOARD TO BOARD 12P

<CAPACITOR>

C101 1-126-233-11 ELECT 22MF 20% 50V  
C102 1-126-103-11 ELECT 470MF 20% 16V  
C104 1-124-910-11 ELECT 47MF 20% 50V  
C106 1-126-233-11 ELECT 22MF 20% 50V  
C108 1-136-165-00 FILM 0.1MF 5% 50V  
  
C109 1-163-133-00 CERAMIC CHIP 470PF 5% 50V  
C111 1-124-925-11 ELECT 2.2MF 20% 50V  
C115 1-124-925-11 ELECT 2.2MF 20% 50V  
C127 1-124-122-11 ELECT 100MF 20% 50V  
C128 1-124-910-11 ELECT 47MF 20% 50V  
  
C129 1-124-910-11 ELECT 47MF 20% 50V  
C138 1-136-165-00 FILM 0.1MF 5% 50V  
C171 1-163-005-11 CERAMIC CHIP 470PF 10% 50V  
C172 1-163-005-11 CERAMIC CHIP 470PF 10% 50V  
C177 1-102-074-00 CERAMIC 0.001MF 10% 50V  
  
C181 1-101-004-00 CERAMIC 0.01MF 50V

<IC>

IC103 8-759-979-62 IC PCF8574

<COIL>

L100 1-410-683-31 INDUCTOR 560UH  
L101 1-408-225-00 INDUCTOR 3.3UH  
L102 1-408-413-00 INDUCTOR 22UH  
L107 1-408-397-00 INDUCTOR 1UH

<TRANSISTOR>

Q113 8-729-901-78 TRANSISTOR 2SC2412K-R  
Q114 8-729-901-78 TRANSISTOR 2SC2412K-R  
Q115 8-729-901-78 TRANSISTOR 2SC2412K-R  
Q116 8-729-901-78 TRANSISTOR 2SC2412K-R  
Q125 8-729-900-89 TRANSISTOR DTC144ES  
  
Q126 8-729-901-06 TRANSISTOR DTA144EK  
Q181 8-729-901-78 TRANSISTOR 2SC2412K-R

<RESISTOR>

JR230 1-216-295-00 METAL GLAZE 0 5% 1/10W  
JR252 1-216-296-00 METAL GLAZE 0 5% 1/8W  
JR253 1-216-296-00 METAL GLAZE 0 5% 1/8W  
JR255 1-216-296-00 METAL GLAZE 0 5% 1/8W  
JR256 1-216-296-00 METAL GLAZE 0 5% 1/8W  
  
JR257 1-216-296-00 METAL GLAZE 0 5% 1/8W  
JR258 1-216-296-00 METAL GLAZE 0 5% 1/8W  
R101 1-216-025-00 METAL GLAZE 100 5% 1/10W  
R105 1-216-079-00 METAL GLAZE 18K 5% 1/10W  
R107 1-216-081-00 METAL GLAZE 22K 5% 1/10W  
  
R108 1-216-079-00 METAL GLAZE 18K 5% 1/10W  
R110 1-249-429-11 CARBON 10K 5% 1/4W  
R111 1-216-057-00 METAL GLAZE 2.2K 5% 1/10W  
R116 1-216-023-00 METAL GLAZE 82 5% 1/10W  
R118 1-216-085-00 METAL GLAZE 33K 5% 1/10W  
  
R128 1-216-027-00 METAL GLAZE 120 5% 1/10W  
R129 1-216-057-00 METAL GLAZE 2.2K 5% 1/10W  
R130 1-216-057-00 METAL GLAZE 2.2K 5% 1/10W  
R157 1-216-049-00 METAL GLAZE 1K 5% 1/10W  
R158 1-249-409-11 CARBON 220 5% 1/4W  
  
R159 1-249-409-11 CARBON 220 5% 1/4W  
R161 1-216-089-00 METAL GLAZE 47K 5% 1/10W  
R162 1-216-095-00 METAL GLAZE 82K 5% 1/10W  
R163 1-216-095-00 METAL GLAZE 82K 5% 1/10W  
R164 1-216-075-00 METAL GLAZE 12K 5% 1/10W  
  
R165 1-216-075-00 METAL GLAZE 12K 5% 1/10W  
R167 1-216-059-00 METAL GLAZE 2.7K 5% 1/10W  
R168 1-216-089-00 METAL GLAZE 47K 5% 1/10W  
R169 1-216-059-00 METAL GLAZE 2.7K 5% 1/10W  
R181 1-216-049-00 METAL GLAZE 1K 5% 1/10W  
  
R182 1-216-065-00 METAL GLAZE 4.7K 5% 1/10W  
R193 1-216-073-00 METAL GLAZE 10K 5% 1/10W  
R194 1-216-017-00 METAL GLAZE 47 5% 1/10W  
R195 1-216-017-00 METAL GLAZE 47 5% 1/10W  
R196 1-216-113-00 METAL GLAZE 470K 5% 1/10W

<TUNER>

TU101A 1-465-301-11 TUNER, ET (UV-816(PLL))

<IF BLOCK>

VIF101 1-466-154-21 IF BLOCK (IFG-389S)

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\*A-1638-011-A C BOARD, COMPLETE (KV-E2521D ONLY)  
\*\*\*\*\*  
\*A-1638-013-A C BOARD, COMPLETE (KV-E2921D ONLY)  
\*\*\*\*\*  
\*1-506-371-00 PIN, CONNECTOR 2P  
\*1-508-765-00 PIN, CONNECTOR (5MM PITCH) 3P  
\*1-568-878-51 PIN, CONNECTOR 3P

**C D**

The components identified by shading and mark **▲** are critical for safety.  
Replace only with part number specified.

**D**

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK		
<b>&lt;CAPACITOR&gt;</b>									
C002	1-163-205-00	CERAMIC CHIP 0.001MF	5%	50V	C525	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C003	1-124-925-11	ELECT 2.2MF	20%	50V	C526	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C004	1-124-120-11	ELECT 220MF	20%	16V	C527	1-137-098-11	FILM 0.1MF	10%	100V
C005	1-124-791-11	ELECT 1MF	20%	50V	C531	1-124-190-00	ELECT 680MF	10%	25V
C008	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	C532	1-124-122-11	ELECT 100MF	20%	50V
C009	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	C533	1-137-096-11	FILM 0.068MF	10%	100V
C010	1-124-120-11	ELECT 220MF	20%	16V	C534	1-124-120-11	ELECT 220MF	20%	16V
C011	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C536	1-131-365-00	TANTALUM 10MF	10%	16V	
C013	1-137-098-11	FILM 0.1MF	10%	100V	C537	1-124-791-11	ELECT 1MF	20%	50V
C014	1-137-098-11	FILM 0.1MF	10%	100V	C538	1-108-680-11	MYLAR 0.001MF	10%	100V
C015	1-124-902-00	ELECT 0.47MF	20%	50V	C539	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C016	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C540	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C017	1-137-098-11	FILM 0.1MF	10%	100V	C592	1-124-122-11	ELECT 100MF	20%	50V
C018	1-163-127-00	CERAMIC CHIP 270PF	5%	50V	C593	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C019	1-137-094-11	FILM 0.047MF	10%	100V	C601	▲ 1-161-964-61	CERAMIC 0.0047MF	250V	
C021	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	C602	▲ 1-161-964-61	CERAMIC 0.0047MF	250V	
C023	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	C603	▲ 1-161-964-61	CERAMIC 0.0047MF	250V	
C024	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	C604	▲ 1-125-318-11	ELECT(BLOCK) 220MF	20%	400V
C027	1-124-910-11	ELECT 47MF	20%	50V	C605	1-124-484-11	ELECT 220MF	20%	35V
C030	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C606	1-163-137-00	CERAMIC CHIP 680PF	5%	50V	
C031	1-163-081-00	CERAMIC CHIP 0.22MF	25V	C607	1-137-028-11	FILM 1MF	10%	63V	
C032	1-163-081-00	CERAMIC CHIP 0.22MF	25V	C608	1-124-927-11	ELECT 4.7MF	20%	50V	
C033	1-163-181-00	CERAMIC CHIP 100PF	5%	50V	C611	1-124-910-11	ELECT 47MF	20%	50V
C034	1-123-875-11	ELECT 10MF	20%	50V	C612	1-108-680-11	MYLAR 0.001MF	10%	100V
C034	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C613	1-136-539-11	FILM 0.0022MF	3%	2KV	
C034	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C614	1-102-030-00	CERAMIC 330PF	10%	500V	
C251	1-124-791-11	ELECT 1MF	20%	50V	C615	1-128-142-11	ELECT 1500MF	20%	25V
C252	1-126-233-11	ELECT 22MF	20%	50V	C616	1-102-030-00	CERAMIC 330PF	10%	500V
C253	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	C617	1-124-122-11	ELECT 100MF	20%	50V
C254	1-137-098-11	FILM 0.1MF	10%	100V	C618	1-162-115-00	CERAMIC 330PF	10%	2KV
C255	1-124-636-00	ELECT 3300MF	20%	25V	C619	1-128-320-51	ELECT 2200MF	20%	16V
C261	1-124-791-11	ELECT 1MF	20%	50V	C620	1-136-173-00	FILM 0.47MF	5%	50V
C262	1-126-233-11	ELECT 22MF	20%	50V	C621	1-124-347-00	ELECT 100MF	20%	160V
C263	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	C622	1-128-320-51	ELECT 2200MF	20%	16V
C264	1-137-098-11	FILM 0.1MF	10%	100V	C623	1-124-910-11	ELECT 47MF	20%	50V
C265	1-124-564-11	ELECT 4700MF	20%	25V	C624	1-124-122-11	ELECT 100MF	20%	50V
C270	1-137-035-11	FILM 0.47MF	10%	100V	C625	1-124-360-00	ELECT 1000MF	20%	16V
C274	1-137-035-11	FILM 0.47MF	10%	100V	C626	1-124-907-11	ELECT 10MF	20%	50V
C501	1-124-927-11	ELECT 4.7MF	20%	50V	C627	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C502	1-124-927-11	ELECT 4.7MF	20%	50V	C631	1-124-927-11	ELECT 4.7MF	20%	50V
C503	1-137-049-11	FILM 0.015MF	10%	400V	C632	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C504	1-163-121-00	CERAMIC CHIP 150PF	5%	50V	C633	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C505	1-108-794-11	MYLAR 0.0015MF	5%	50V	C801	1-126-105-11	ELECT 1000MF	20%	35V
C506	1-137-102-11	FILM 0.022MF	10%	250V	C802	1-102-030-00	CERAMIC 330PF	10%	500V
C507	1-137-033-11	FILM 0.33MF	10%	100V	C804	1-123-948-00	ELECT 22MF	20%	250V
C508	1-137-102-11	FILM 0.022MF	10%	250V	C805	1-162-114-00	CERAMIC 0.0047MF	20%	2KV
C509	1-137-098-11	FILM 0.1MF	10%	100V	C806	1-137-098-11	FILM 0.1MF	10%	100V
C510	1-161-959-00	CERAMIC 22PF	10%	500V	C807	1-106-395-00	MYLAR 0.15MF	10%	200V
C511	1-108-686-11	MYLAR 0.0033MF	10%	100V	C810	1-123-024-21	ELECT 33MF	10%	160V
C512	1-137-098-11	FILM 0.1MF	10%	100V	C811	1-136-113-00	FILM 2MF	5%	200V
C513	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	C812	1-124-634-11	ELECT 1MF	20%	250V
C514	1-137-031-11	FILM 0.22MF	10%	100V	C813	1-102-212-00	CERAMIC 820PF	10%	500V
C515	1-124-791-11	ELECT 1MF	20%	50V	C814	▲ 1-161-731-51	CERAMIC 0.001MF	10%	2KV
C516	1-108-680-11	MYLAR 0.001MF	10%	100V	C815	1-136-111-00	FILM 1MF	5%	200V
C517	1-124-252-00	ELECT 0.33MF	20%	50V				(KV-E2521D ONLY)	
C518	1-124-902-00	ELECT 0.47MF	20%	50V		1-136-54Q-11	FILM 0.82MF	5%	200V
C519	1-136-173-00	FILM 0.47MF	5%	50V	C817	▲ 1-136-565-11	FILM 0.015MF	3%	(KV-E2921D ONLY)
	1-136-171-00	FILM 0.33MF	5%	50V		▲ 1-136-591-11	FILM 0.017MF	3%	(KV-E2521D ONLY)
C520	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V				(KV-E2921D ONLY)	
C521	1-137-098-11	FILM 0.1MF	10%	100V	C818	▲ 1-129-721-51	FILM 0.039MF	10%	630V
C522	1-124-122-11	ELECT 100MF	20%	50V	C819	▲ 1-161-731-51	CERAMIC 0.001MF	10%	2KV
C523	1-108-680-11	MYLAR 0.001MF	10%	100V					
C524	1-108-798-11	MYLAR 0.0033MF	5%	50V					

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

D

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK								
C820	1-137-046-11	FILM	0.0082MF	10%	400V	D618	8-719-109-89	DIODE RD5.6ES-B2							
C821 $\Delta$	1-162-116-51	CERAMIC	680PF	10%	2KV	D619	8-719-982-24	DIODE MTZJ-33A							
$\Delta$ A 1-162-134-51	CERAMIC	470PF	(KV-E2521D ONLY)	10%	2KV	D620	8-719-800-76	DIODE 1SS226							
C822	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	D621	8-719-982-24	DIODE MTZJ-33A							
C823	1-137-043-11	FILM	0.0047MF	10%	400V	D622	8-719-911-19	DIODE 1SS119							
C824	1-102-212-00	CERAMIC	820PF	10%	500V	D623	8-719-911-19	DIODE 1SS119							
C825	1-137-102-11	FILM	0.022MF	10%	250V	D624	8-719-911-19	DIODE 1SS119							
C1601 $\Delta$ A 1-136-518-11	FILM	0.33MF	(KV-E2521D ONLY)	20%	300V	D625	8-719-921-91	DIODE MTZJ-15A							
C1602 $\Delta$ A 1-136-519-11	FILM	0.47MF	(KV-E2521D ONLY)	20%	300V	D801	8-719-300-33	DIODE RU-3AM							
C1603 $\Delta$ A 1-164-246-51	CERAMIC	0.0022MF	(KV-E2521D ONLY)	20%	400V	D802	8-719-300-33	DIODE RU-3AM							
C1604 $\Delta$ A 1-164-246-51	CERAMIC	0.0022MF	(KV-E2521D ONLY)	20%	400V	D803	8-719-976-64	DIODE RGP02-17							
C1605 $\Delta$ A 1-164-246-51	CERAMIC	0.0022MF	(KV-E2521D ONLY)	20%	400V	D804	8-719-911-55	DIODE U05G							
C1607 $\Delta$ A 1-161-964-61	CERAMIC	0.0047MF	(KV-E2521D ONLY)	250V	D805	8-719-911-55	DIODE U05G								
<FILTER>															
<IC>															
CF001	1-577-364-11	VIBRATOR, CERAMIC		IC001	8-759-515-80	IC SDA20560-A008									
CF501	1-567-888-11	OSCILLATOR, CERAMIC		IC002	8-759-208-06	IC TC4051BPHB									
<CONNECTOR>															
CND801*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P		(KV-E2921D ONLY)	IC261	4-812-134-00	RIVET NYLON, 3.5; IC251									
<DIODE>															
D003	8-719-911-19	DIODE 1SS119		IC601	8-759-988-95	IC TEA2260									
D005	8-719-109-89	DIODE RD5.6ES-B2		IC604	8-759-510-52	IC TEA7605									
D006	8-719-982-24	DIODE MTZJ-33A		IC608	8-759-037-26	IC TYA7812CT									
D007	8-719-982-08	DIODE MTZJ-3.9B		<COIL>											
D009	8-719-109-89	DIODE RD5.6ES-B2		L501	1-408-225-00	INDUCTOR 3.3UH									
D010	8-719-921-54	DIODE MTZJ-6.2B		L601	*1-420-872-00	COIL, AIR CORE									
D011	8-719-921-54	DIODE MTZJ-6.2B		L602	1-410-396-41	FERRITE BEAD INDUCTOR									
D012	8-719-911-19	DIODE 1SS119		L603	1-410-396-41	FERRITE BEAD INDUCTOR									
D013	8-719-109-97	DIODE RD6.8ES-B2		L604	1-410-671-31	INDUCTOR 47UH									
D271	8-719-921-88	DIODE MTZJ-13B		L605	1-459-585-11	COIL (WITH CORE) (DRUM TYPE)									
D272	8-719-911-19	DIODE 1SS119		L606	1-421-013-00	COIL (HORIZONTAL CHOKER) 25UH									
D501	8-719-911-19	DIODE 1SS119		L607	1-410-671-31	INDUCTOR 47UH									
D504	8-719-911-55	DIODE U05G		L801	1-459-087-00	COIL, HCC DUST CORE 3.9MMH									
D506	8-719-800-76	DIODE 1SS226 (KV-E2521D ONLY)		(KV-E2921D ONLY)											
D508	8-719-911-19	DIODE 1SS119		L803	1-459-104-00	COIL, DUST CORE									
D509	8-719-911-19	DIODE 1SS119		L804	1-408-239-00	INDUCTOR 4.7MMH									
D511	8-719-911-55	DIODE U05G		L805	1-459-755-11	COIL, HORIZONTAL LINEARITY									
D512	8-719-911-55	DIODE U05G		(KV-E2521D ONLY)											
D513	8-719-010-34	DIODE UZ-4.7BSC		1-459-907-11	COIL, HORIZONTAL LINEARITY										
D514	8-719-911-19	DIODE 1SS119 (KV-E2921D ONLY)		(KV-E2921D ONLY)											
D515	8-719-911-19	DIODE 1SS119 (KV-E2921D ONLY)		L806	1-459-111-00	COIL, DRAM CORE (CDI) (KV-E2521D ONLY)									
D601 $\Delta$	8-719-510-63	DIODE D4S860L-F		1-459-087-00	COIL, HCC DUST CORE 3.9MMH			(KV-E2921D ONLY)							
D602	8-719-300-33	DIODE RU-3AM		L809	*1-420-872-00	COIL, AIR CORE									
D603	8-719-911-55	DIODE U05G		L810 $\Delta$ 1-421-982-12	PMC (KV-E2521D ONLY)										
D604	8-719-911-55	DIODE U05G		(KV-E2921D ONLY)											
D605	8-719-911-55	DIODE U05G		515	1-421-794-21	TRANSFORMER, FERRITE (PMT)									
D606	8-719-300-33	DIODE RU-3AM		(KV-E2921D ONLY)											
D607	8-719-300-33	DIODE RU-3AM													
D608	8-719-300-33	DIODE RU-3AM													
D609	8-719-982-24	DIODE MTZJ-33A													
D610	8-719-300-59	DIODE CTU-12S		<TRANSFORMER>											
D611	8-719-900-26	DIODE ERD29-08J													
D612	8-719-300-59	DIODE CTU-12S													
D613	8-719-979-85	DIODE EGP20G													
D614	8-719-979-85	DIODE EGP20G													
D616	8-719-921-54	DIODE MTZJ-6.2B													
D617	8-719-911-19	DIODE 1SS119													

**D**

The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
T601	▲ 1-450-037-11	S.R.T (KV-E2921D ONLY)		R015	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
T602	▲ 1-424-277-11	TRANSFORMER, TRIGGER PULSE		R016	1-216-085-00	METAL GLAZE	33K 5% 1/10W
T801	▲ 1-437-090-21	HDT		R017	1-216-748-11	METAL GLAZE	39K 5% 1/10W
T802	▲ 1-439-416-11	TRANSFORMER ASSY, FLYBACK (UX-1600)		R018	1-216-095-00	METAL GLAZE	82K 5% 1/10W
		<IC LINK>		R019	1-216-025-00	METAL GLAZE	100 5% 1/10W
PS601	▲ 1-532-984-91	LINK, IC (ICP-N50) 2A		R020	1-216-025-00	METAL GLAZE	100 5% 1/10W
PS602	▲ 1-532-984-91	LINK, IC (ICP-N50) 2A		R021	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
PS603	▲ 1-532-679-91	LINK, IC (ICP-N15) 0.6A		R022	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
PS604	▲ 1-532-984-91	LINK, IC (ICP-N50) 2A		R024	1-216-073-00	METAL GLAZE	10K 5% 1/10W
		<TRANSISTOR>		R025	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q001	8-729-901-01	TRANSISTOR DTC144EK		R026	1-216-182-00	METAL GLAZE	220 5% 1/8W
Q002	8-729-901-01	TRANSISTOR DTC144EK		R027	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q003	8-729-216-22	TRANSISTOR 2SA1162-G		R028	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q004	8-729-216-22	TRANSISTOR 2SA1162-G		R029	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q005	8-729-901-01	TRANSISTOR DTC144EK		R030	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q006	8-729-901-01	TRANSISTOR DTC144EK		R031	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q007	8-729-901-78	TRANSISTOR 2SC2412K-R		R032	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q008	8-729-901-78	TRANSISTOR 2SC2412K-R		R033	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q009	8-729-901-78	TRANSISTOR 2SC2412K-R		R034	1-216-077-00	METAL GLAZE	15K 5% 1/10W
Q010	8-729-901-78	TRANSISTOR 2SC2412K-R		R035	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q251	8-729-901-78	TRANSISTOR 2SC2412K-R		R036	1-216-083-00	METAL GLAZE	27K 5% 1/10W
Q261	8-729-901-78	TRANSISTOR 2SC2412K-R		R037	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
Q271	8-729-901-78	TRANSISTOR 2SC2412K-R		R038	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
Q505	8-729-216-22	TRANSISTOR 2SA1162-G		R039	1-216-081-00	METAL GLAZE	22K 5% 1/10W
Q506	8-729-140-97	TRANSISTOR 2SB734-34		R040	1-216-077-00	METAL GLAZE	15K 5% 1/10W
Q507	8-729-216-22	TRANSISTOR 2SA1162-G		R041	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q598	8-729-216-22	TRANSISTOR 2SA1162-G		R042	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q601	8-729-122-03	TRANSISTOR 2SA1220A-P		R043	1-216-041-00	METAL GLAZE	470 5% 1/10W
Q602	8-729-209-02	TRANSISTOR 2SD774-34		R044	1-216-097-00	METAL GLAZE	100K 5% 1/10W
Q603	8-729-122-03	TRANSISTOR 2SA1220A-P		R045	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
Q604	8-729-216-22	TRANSISTOR 2SA1162-G		R046	1-216-095-00	METAL GLAZE	82K 5% 1/10W
Q605	8-729-901-78	TRANSISTOR 2SC2412K-R		R047	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q606	8-729-901-78	TRANSISTOR 2SC2412K-R		R048	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q607	8-729-920-92	TRANSISTOR 2SD2096-EF		R049	1-216-073-00	METAL GLAZE	10K 5% 1/10W
Q608	8-729-901-78	TRANSISTOR 2SC2412K-R		R050	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
Q609	8-729-320-62	TRANSISTOR 2SD789-34		R051	1-216-041-00	METAL GLAZE	470 5% 1/10W
Q801	8-729-901-78	TRANSISTOR 2SC2412K-R		R052	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q804	8-729-304-50	TRANSISTOR 2SD1941-06		R053	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q805	8-729-119-80	TRANSISTOR 2SC2688-LK		R054	1-216-049-00	METAL GLAZE	1K 5% 1/10W
		<RESISTOR>		R055	1-216-037-00	METAL GLAZE	330 5% 1/10W
JR1	1-216-296-00	METAL GLAZE 0 5% 1/8W		R056	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR3	1-216-296-00	METAL GLAZE 0 5% 1/8W		R057	1-216-025-00	METAL GLAZE	100 5% 1/10W
JR4	1-216-296-00	METAL GLAZE 0 5% 1/8W		R058	1-216-049-00	METAL GLAZE	1K 5% 1/10W
JR5	1-216-295-00	METAL GLAZE 0 5% 1/10W		R059	1-216-049-00	METAL GLAZE	1K 5% 1/10W
JR6	1-216-295-00	METAL GLAZE 0 5% 1/10W		R060	1-216-049-00	METAL GLAZE	1K 5% 1/10W
JR7	1-216-296-00	METAL GLAZE 0 5% 1/8W		R061	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
JR8	1-216-295-00	METAL GLAZE 0 5% 1/10W		R062	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R001	1-216-041-00	METAL GLAZE 470 5% 1/10W		R063	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R002	1-216-041-00	METAL GLAZE 470 5% 1/10W		R064	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R003	1-216-198-00	METAL GLAZE 1K 5% 1/8W		R065	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R004	1-216-049-00	METAL GLAZE 1K 5% 1/10W		R066	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R005	1-216-081-00	METAL GLAZE 22K 5% 1/10W		R067	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R006	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R068	1-216-174-00	METAL GLAZE	100 5% 1/8W
R007	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		R069	1-216-174-00	METAL GLAZE	100 5% 1/8W
R008	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R070	1-216-198-00	METAL GLAZE	1K 5% 1/8W
R009	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R071	1-216-198-00	METAL GLAZE	1K 5% 1/8W
R010	1-216-041-00	METAL GLAZE 470 5% 1/10W		R072	1-216-222-00	METAL GLAZE	10K 5% 1/8W
R011	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		R073	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R075	1-216-041-00	METAL GLAZE	470 5% 1/10W
R013	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R076	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R014	1-216-085-00	METAL GLAZE 33K 5% 1/10W		R078	1-216-198-00	METAL GLAZE	1K 5% 1/8W
				R079	1-216-073-00	METAL GLAZE	10K 5% 1/10W
				R080	1-216-073-00	METAL GLAZE	10K 5% 1/10W

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R081	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R534	1-216-119-00	METAL GLAZE	820K 5% 1/10W
R082	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R535	1-249-749-00	CARBON	2.2M 5% 1/4W
R083	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R536	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R084	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R537	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R085	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R538	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R086	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R539	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R087	1-216-035-00	METAL GLAZE	270 5% 1/10W	R540	1-216-013-00	METAL GLAZE	33 5% 1/10W
R088	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R541	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R093	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R542	1-216-308-00	METAL GLAZE	4.7 5% 1/10W
R094	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R543	1-249-451-11	CARBON	2.2 5% 1/4W
R095	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R544	1-247-745-11	CARBON	330 5% 1/2W
R096	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R545	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R098	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R546	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R251	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R547	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R252	1-216-039-00	METAL GLAZE	390 5% 1/10W	R548	1-216-349-00	METAL OXIDE	1 5% 1W F
R253	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R549	1-216-454-11	METAL OXIDE	390 5% 2W F
R254	1-216-357-00	METAL OXIDE	4.7 5% 1W F	R550	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R255	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R551	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R256	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R553	1-215-869-11	METAL OXIDE	1K 5% 1W
R257	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R554	1-216-037-00	METAL GLAZE	330 5% 1/10W
R258	1-215-869-11	METAL OXIDE	1K 5% 1W F	R555	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R259	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R556	1-216-025-00	METAL GLAZE	100 5% 1/10W
R261	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R557	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R262	1-216-039-00	METAL GLAZE	390 5% 1/10W	R558	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R263	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R559	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R264	1-216-357-00	METAL OXIDE	4.7 5% 1W F	R560	1-216-037-00	METAL GLAZE	330 5% 1/10W
R265	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R561	1-216-107-00	METAL GLAZE	270K 5% 1/10W (KV-E2921D ONLY)
R266	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R570	1-216-045-00	METAL GLAZE	680 5% 1/10W (KV-E2921D ONLY)
R267	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R591	1-216-047-00	METAL GLAZE	820 5% 1/10W
R268	1-215-869-11	METAL OXIDE	1K 5% 1W F	R592	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R269	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R593	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R270	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R594	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R271	1-216-045-00	METAL GLAZE	680 5% 1/10W	R597	1-216-041-00	METAL GLAZE	470 5% 1/10W
R272	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R598	1-215-900-11	METAL OXIDE	22K 5% 2W F
R273	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R600	1-249-381-11	CARBON	1 5% 1/4W
R274	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R601	1-216-353-00	METAL OXIDE	2.2 5% 1W F
R500	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R603	1-216-469-11	METAL OXIDE	12 5% 3W F
R501	1-216-041-00	METAL GLAZE	470 5% 1/10W	R604	1-216-025-00	METAL GLAZE	100 5% 1/10W
R502	1-216-033-00	METAL GLAZE	220 5% 1/10W	R605	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R503	1-216-035-00	METAL GLAZE	270 5% 1/10W	R606	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R504	1-249-420-11	CARBON	1.8K 5% 1/4W	R607	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W (KV-E2521D ONLY)
R505	1-216-077-00	METAL GLAZE	15K 5% 1/10W		1-216-067-00	METAL GLAZE	5.6K 5% 1/10W (KV-E2921D ONLY)
R506	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R608	1-216-488-11	METAL OXIDE	18K 5% 3W F
R509	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R609	1-216-007-00	METAL GLAZE	18 5% 1/10W
R510	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R610	1-244-941-00	CARBON	680K 5% 1/2W
R514	1-216-033-00	METAL GLAZE	220 5% 1/10W	R611	1-216-015-00	METAL GLAZE	39 5% 1/10W
R515	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R612	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R517	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R613	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R518	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R614	1-205-758-11	WIREWOUND	100 10% 10W F
R519	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R616	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R520	1-216-037-00	METAL GLAZE	330 5% 1/10W	R617	1-216-037-00	METAL GLAZE	330 5% 1/10W
R521	1-216-025-00	METAL GLAZE	100 5% 1/10W	R618	1-216-431-11	METAL OXIDE	560 5% 1W F
R522	1-215-469-00	METAL	100K 1% 1/6W	R619	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R523	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R620	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R524	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R621	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R525	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R622	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R526	1-249-409-11	CARBON	220 5% 1/4W F	R623	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R527	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R624	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R528	1-216-031-00	METAL GLAZE	180 5% 1/10W	R625	1-215-865-11	METAL OXIDE	220 5% 1W F
R529	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W				
R530	1-249-448-11	CARBON	1.2 5% 1/4W F				
R531	1-216-099-00	METAL GLAZE	120K 5% 1/10W				
R532	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R533	1-216-295-00	METAL GLAZE	0 5% 1/10W				

The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

D VM V

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK	
R626	1-216-037-00	METAL GLAZE	330 5% 1/10W					
R628	1-216-001-00	METAL GLAZE	10 5% 1/10W					
R629	1-216-037-00	METAL GLAZE	330 5% 1/10W					
R633	1-216-049-00	METAL GLAZE	1K 5% 1/10W					
R634	1-216-430-11	METAL OXIDE	390 5% 1W F					
R635	1-216-073-00	METAL GLAZE	10K 5% 1/10W					
R636	1-216-073-00	METAL GLAZE	10K 5% 1/10W					
R643	1-217-189-21	WIREWOUND	0.12 5% 2W F					
R651	1-216-025-00	METAL GLAZE	100 5% 1/10W					
R653	1-205-758-11	WIREWOUND	100 10% 10W F					
R802	1-249-443-11	CARBON	0.47 5% 1/4W F		C751	1-101-361-00	CERAMIC	150PF 5% 50V
R805	1-249-448-11	CARBON	1.2 5% 1/4W F		C752	1-108-629-11	MYLAR	0.018MF 10% 100V
R806	1-216-093-00	METAL GLAZE	68K 5% 1/10W		C753	1-137-047-11	FILM	0.01MF 10% 400V
R807	1-215-869-11	METAL OXIDE	1K 5% 1W F		C754	1-102-980-00	CERAMIC	270PF 5% 50V
R809	1-202-821-11	SOLID	1.8K 10% 1/2W		C757	1-108-692-11	MYLAR	0.01MF 10% 200V
R810	1-202-818-00	SOLID	1K 10% 1/2W		C759	1-123-875-11	ELECT	10MF 20% 50V
R811	1-215-882-00	METAL OXIDE	22 5% 2W F		C760	1-124-917-11	ELECT	33MF 20% 50V
R812	1-249-494-11	CARBON	68K 5% 1/2W	(KV-E2521D ONLY)	C761	1-101-006-00	CERAMIC	0.047MF 50V
	1-247-281-00	CARBON	51K 5% 1/2W		C762	1-137-047-11	FILM	0.01MF 10% 400V
R815	1-215-884-11	METAL OXIDE	47 5% 2W F	(KV-E2921D ONLY)				
R816	1-215-868-00	METAL OXIDE	680 5% 1W F		L751	1-408-413-00	INDUCTOR	22UH
R817	1-216-049-00	METAL GLAZE	1K 5% 1/10W		L770	1-410-665-31	INDUCTOR	15UH
R820	1-249-403-11	CARBON	68 5% 1/4W					
R821	1-247-725-11	CARBON	10K 5% 1/4W F					
R822	1-217-778-11	FUSIBLE	1K 5% 1W F					
R825	1-216-345-11	METAL OXIDE	0.47 5% 1W F		Q751	8-729-119-78	TRANSISTOR	2SC2785-HFE
R826	1-216-097-00	METAL GLAZE	100K 5% 1/10W		Q752	8-729-119-78	TRANSISTOR	2SC2785-HFE
R827	1-216-073-00	METAL GLAZE	10K 5% 1/10W		Q753	8-729-140-97	TRANSISTOR	2SB734-34
R828	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W		Q754	8-729-140-96	TRANSISTOR	2SD774-34
R829	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W					
R831	1-249-451-11	CARBON	2.2 5% 1/4W					
R1601Δ	1-246-513-75	CARBON	47K 5% 1/4W		R751	1-249-418-11	CARBON	1.2K 5% 1/4W
R1602Δ	1-244-945-91	CARBON	1M 5% 1/2W		R752	1-249-426-11	CARBON	5.6K 5% 1/4W
R1603Δ	1-217-328-11	WIREWOUND	2.7 10% 7W F		R753	1-249-414-11	CARBON	560 5% 1/4W
R1604Δ	1-246-513-75	CARBON	47K 5% 1/4W		R754	1-249-434-11	CARBON	27K 5% 1/4W
R1605Δ	1-218-265-91	METAL GLAZE	8.2M 5% 1W		R755	1-249-405-11	CARBON	100 5% 1/4W
R5501	1-216-073-00	METAL GLAZE	10K 5% 1/10W		R756	1-249-419-11	CARBON	1.5K 5% 1/4W
R5503	1-216-308-00	METAL GLAZE	4.7 5% 1/10W		R757	1-249-405-11	CARBON	100 5% 1/4W
	1-216-001-00	METAL GLAZE	10 5% 1/10W	(KV-E2521D ONLY)	R758	1-249-409-11	CARBON	220 5% 1/4W
					R760	1-249-411-11	CARBON	330 5% 1/4W
					R761	1-249-429-11	CARBON	10K 5% 1/4W
R5504	1-216-121-00	METAL GLAZE	1M 5% 1/10W		R762	1-247-895-00	CARBON	470K 5% 1/4W
R5505	1-216-001-00	METAL GLAZE	10 5% 1/10W		R763	1-249-429-11	CARBON	10K 5% 1/4W
R5506	1-216-075-00	METAL GLAZE	12K 5% 1/10W	(KV-E2921D ONLY)	R764	1-249-455-11	CARBON	4.7 5% 1/4W
				R765	1-249-455-11	CARBON	4.7 5% 1/4W	
				R766	1-247-753-11	CARBON	1.2K 5% 1/2W	
<VARIABLE RESISTOR>								
RV501	1-238-013-11	RES, ADJ, CARBON	2.2K		R767	1-247-751-11	CARBON	820 5% 1/2W
RV502	1-238-016-11	RES, ADJ, CARBON	10K		R768	1-215-887-00	METAL OXIDE	150 5% 2W F
RV601	1-238-011-11	RES, ADJ, CARBON	470		R769	1-212-889-00	FUSIBLE	220 5% 1/4W F
*****								
<SPARK GAP>								
SG801	1-519-422-11	GAP, SPARK						
<CAPACITOR>								
<THERMISTOR>								
THP601Δ	1-808-059-32	THERMISTOR, POSITIVE			C1	1-126-101-11	ELECT	100MF 20% 16V
					C2	1-163-038-00	CERAMIC CHIP	0.1MF 25V
					C3	1-124-120-11	ELECT	220MF 20% 16V
					C4	1-163-077-00	CERAMIC CHIP	0.1MF 50V
					C5	1-124-120-11	ELECT	220MF 20% 16V
					C6	1-163-038-00	CERAMIC CHIP	0.1MF 25V

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

V

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C7	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	JR11	1-216-295-00	METAL GLAZE 0 5% 1/10W
C8	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	JR12	1-216-295-00	METAL GLAZE 0 5% 1/10W
C9	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	JR13	1-216-296-00	METAL GLAZE 0 5% 1/8W
C10	1-163-038-00	CERAMIC CHIP 0.1MF		25V	JR14	1-216-296-00	METAL GLAZE 0 5% 1/8W
C11	1-163-038-00	CERAMIC CHIP 0.1MF		25V	JR16	1-216-296-00	METAL GLAZE 0 5% 1/8W
C12	1-163-038-00	CERAMIC CHIP 0.1MF		25V	JR17	1-216-295-00	METAL GLAZE 0 5% 1/10W
C13	1-163-038-00	CERAMIC CHIP 0.1MF		25V	JR21	1-216-296-00	METAL GLAZE 0 5% 1/8W
C14	1-124-927-11	ELECT 4.7MF	20%	50V	JR22	1-216-295-00	METAL GLAZE 0 5% 1/10W
C15	1-124-927-11	ELECT 4.7MF	20%	50V	JR23	1-216-295-00	METAL GLAZE 0 5% 1/10W
C16	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	JR24	1-216-296-00	METAL GLAZE 0 5% 1/8W
C17	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	JR26	1-216-296-00	METAL GLAZE 0 5% 1/8W
C18	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	JR27	1-216-295-00	METAL GLAZE 0 5% 1/10W
C19	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	JR201	1-216-295-00	METAL GLAZE 0 5% 1/10W
					JR204	1-216-295-00	METAL GLAZE 0 5% 1/10W
					JR207	1-216-295-00	METAL GLAZE 0 5% 1/10W
<CONNECTOR>							
CNV1	*1-565-393-11	CONNECTOR, BOARD TO BOARD			JR208	1-216-295-00	METAL GLAZE 0 5% 1/10W
CNV2	*1-565-393-11	CONNECTOR, BOARD TO BOARD			JR211	1-216-295-00	METAL GLAZE 0 5% 1/10W
					JR213	1-216-295-00	METAL GLAZE 0 5% 1/10W
					JR219	1-216-296-00	METAL GLAZE 0 5% 1/8W
					JR220	1-216-295-00	METAL GLAZE 0 5% 1/10W
<DIODE>							
D1	8-719-105-91	DIODE RD5.6M-B2			JR223	1-216-295-00	METAL GLAZE 0 5% 1/10W
D3	8-719-914-44	DIODE DAP202K			R1	1-218-326-11	METAL GLAZE 470 5% 1/2W
D4	8-719-400-18	DIODE MA152WK			R3	1-216-049-00	METAL GLAZE 1K 5% 1/10W
D5	8-719-914-44	DIODE DAP202K			R4	1-216-025-00	METAL GLAZE 100 5% 1/10W
D6	8-719-400-18	DIODE MA152WK			R5	1-216-047-00	METAL GLAZE 820 5% 1/10W
D7	8-719-105-52	DIODE RD3.6M-B2			R6	1-216-001-00	METAL GLAZE 10 5% 1/10W
D9	8-719-106-17	DIODE RD6.8M-B2			R7	1-216-083-00	METAL GLAZE 27K 5% 1/10W
					R8	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
					R9	1-216-308-00	METAL GLAZE 4.7 5% 1/10W
					R02	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W
<IC>							
IC1	8-759-038-58	IC SDA20162-A002			R10	1-218-325-11	METAL GLAZE 120 5% 1/4W
IC2	8-759-510-46	IC SAA5246P/E			R11	1-218-325-11	METAL GLAZE 120 5% 1/4W
IC3	8-759-510-49	IC FCB61C65-70P			R12	1-218-325-11	METAL GLAZE 120 5% 1/4W
					R13	1-216-025-00	METAL GLAZE 100 5% 1/10W
					R14	1-216-001-00	METAL GLAZE 10 5% 1/10W
<COIL>							
L1	1-408-403-00	INDUCTOR 3.3UH			R15	1-216-013-00	METAL GLAZE 33 5% 1/10W
L2	1-408-407-00	INDUCTOR 6.8UH			R16	1-216-013-00	METAL GLAZE 33 5% 1/10W
L3	1-408-407-00	INDUCTOR 6.8UH			R17	1-216-013-00	METAL GLAZE 33 5% 1/10W
L4	1-408-407-00	INDUCTOR 6.8UH			R18	1-216-025-00	METAL GLAZE 100 5% 1/10W
					R19	1-216-025-00	METAL GLAZE 100 5% 1/10W
					R20	1-216-041-00	METAL GLAZE 470 5% 1/10W
					R21	1-216-041-00	METAL GLAZE 470 5% 1/10W
<IC LINK>							
PS1	$\Delta$ 1-532-679-91	LINK, IC (ICP-N15) 0.6A			R22	1-216-168-00	METAL GLAZE 56 5% 1/8W
					R23	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W
					R24	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
<TRANSISTOR>							
Q1	8-729-900-53	TRANSISTOR DTC114EK			R25	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
Q2	8-729-920-92	TRANSISTOR 2SD2096-EF			R26	1-216-049-00	METAL GLAZE 1K 5% 1/10W
Q3	8-729-901-78	TRANSISTOR 2SC2412K-R			R27	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W
Q4	8-729-901-78	TRANSISTOR 2SC2412K-R			R28	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W
Q5	8-729-807-87	TRANSISTOR 2SB1295-UL6			R34	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
Q6	8-729-807-87	TRANSISTOR 2SB1295-UL6			R35	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
Q7	8-729-807-87	TRANSISTOR 2SB1295-UL6			R40	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
Q8	8-729-901-78	TRANSISTOR 2SC2412K-R			R41	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
					R42	1-216-049-00	METAL GLAZE 1K 5% 1/10W
					R44	1-216-295-00	METAL GLAZE 0 5% 1/10W
					R46	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
					R47	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
					R49	1-216-049-00	METAL GLAZE 1K 5% 1/10W
JR01	1-216-295-00	METAL GLAZE 0 5% 1/10W			<VARIABLE RESISTOR>		
JR02	1-216-295-00	METAL GLAZE 0 5% 1/10W					
JR03	1-216-295-00	METAL GLAZE 0 5% 1/10W					
JR08	1-216-295-00	METAL GLAZE 0 5% 1/10W					
JR09	1-216-295-00	METAL GLAZE 0 5% 1/10W			RV1	1-238-012-11	RES, ADJ, CARBON 1K

**V H1 H2 J2 J1**

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK						
<b>&lt;CRYSTAL&gt;</b>													
X1	1-579-266-21	CRYSTAL VIBRATOR		<b>&lt;COIL&gt;</b>									
X2	1-577-364-11	VIBRATOR, CERAMIC		L1751	1-412-240-11	INDUCTOR, WIDE BAND							
*****													
*1-638-391-11	H1 BOARD		*****	L1752	1-412-240-11	INDUCTOR, WIDE BAND							
*****													
1-562-837-11	JACK			A-1651-018-A	J1 BOARD, COMPLETE (KV-E2521D ONLY)								
*1-564-512-11	PLUG, CONNECTOR 9P			A-1651-020-A	J1 BOARD, COMPLETE (KV-E2921D ONLY)								
1-568-678-11	TERMINAL BLOCK, S 3P			*****									
*1-568-879-51	PIN, CONNECTOR 4P			1-561-534-41	SOCKET 21P								
*1-568-881-51	PIN, CONNECTOR 6P			*1-564-524-11	PLUG, CONNECTOR 9P								
<b>&lt;RESISTOR&gt;</b>													
R1651	1-249-413-11	CARBON	470	5%	1/4W	*1-564-527-11	PLUG, CONNECTOR 12P						
R1652	1-249-413-11	CARBON	470	5%	1/4W	*1-566-641-11	CONNECTOR, HINGE (TAB) 18P						
<b>&lt;SWITCH&gt;</b>													
S1651	1-571-532-21	SWITCH, TACTIL		C203	1-124-925-11	ELECT	2.2MF	20%	50V				
S1652	1-571-532-21	SWITCH, TACTIL		C205	1-124-927-11	ELECT	4.7MF	20%	50V				
S1653	1-571-532-21	SWITCH, TACTIL		C206	1-124-925-11	ELECT	2.2MF	20%	50V				
*****													
*1-638-392-11	H2 BOARD		*****	C207	1-124-927-11	ELECT	4.7MF	20%	50V				
*****				C213	1-126-233-11	ELECT	22MF	20%	50V				
*1-568-882-51	PIN, CONNECTOR 7P			C214	1-137-045-11	FILM	0.0068MF	10%	400V				
*4-374-987-01	GUIDE, LIGHT			C217	1-137-045-11	FILM	0.0068MF	10%	400V				
*4-381-686-01	BRACKET (B), LIGHT GUIDE			C218	1-137-102-11	FILM	0.022MF	10%	250V				
<b>&lt;DIODE&gt;</b>													
D1651	8-719-948-31	DIODE LD-201VR		C219	1-137-102-11	FILM	0.022MF	10%	250V				
*****				C220	1-108-686-11	MYLAR	0.0033MF	10%	100V				
*4-201-076-01	HOLDER, LED; D1651			C221	1-108-686-11	MYLAR	0.0033MF	10%	100V				
D1652	8-719-948-31	DIODE LD-201VR		C222	1-137-095-11	FILM	0.056MF	10%	100V				
*****				C223	1-137-095-11	FILM	0.056MF	10%	100V				
*4-201-076-01	HOLDER, LED; D1652			C224	1-137-047-11	FILM	0.01MF	10%	400V				
D1654	8-719-948-31	DIODE LD-201VR		C225	1-136-173-00	FILM	0.47MF	5%	50V				
*****				C226	1-136-173-00	FILM	0.47MF	5%	50V				
*4-201-076-01	HOLDER, LED; D1654			C227	1-137-102-11	FILM	0.022MF	10%	250V				
<b>&lt;IC&gt;</b>													
IC1651	8-741-101-75	IC SBX1610-11		C228	1-137-104-11	FILM	0.033MF	10%	250V				
*****													
<b>&lt;RESISTOR&gt;</b>													
R1662	1-249-413-11	CARBON	470	5%	1/4W	C229	1-137-049-11	FILM	0.015MF	10%	400V		
*****													
*1-638-393-11	J2 BOARD		*****	C230	1-137-049-11	FILM	0.015MF	10%	400V				
*****				C231	1-124-902-00	ELECT	0.47MF	20%	50V				
1-537-339-11	TERMINAL BOARD			C232	1-123-875-11	ELECT	10MF	20%	50V				
*1-560-278-21	PLUG, CONNECTOR 4P			C233	1-163-005-11	CERAMIC CHIP	470PF	10%	50V				
*1-564-517-11	PLUG, CONNECTOR 2P			C234	1-163-005-11	CERAMIC CHIP	470PF	10%	50V				
*1-564-519-11	PLUG, CONNECTOR 4P			C235	1-163-005-11	CERAMIC CHIP	470PF	10%	50V				
<b>&lt;CAPACITOR&gt;</b>													
C1751	1-101-005-00	CERAMIC	0.022MF		C236	1-163-005-11	CERAMIC CHIP	470PF	10%	50V			
C1752	1-101-005-00	CERAMIC	0.022MF	50V	C237	1-124-902-00	ELECT	0.47MF	20%	50V			
C1755	1-102-114-00	CERAMIC	470PF	10%	C238	1-163-125-00	CERAMIC CHIP	220PF	5%	50V			
C1756	1-102-114-00	CERAMIC	470PF	10%	C239	1-126-103-11	ELECT	470MF	20%	16V			
*****													
<b>&lt;CAPACITOR&gt;</b>													
C1401	1-123-875-11	ELECT	10MF	20%	50V	C240	1-163-018-00	CERAMIC CHIP	0.0056MF	10%	50V		
C1402	1-126-103-11	ELECT	470MF	20%	50V	C241	1-163-018-00	CERAMIC CHIP	0.0056MF	10%	50V		
C1403	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	C242	1-163-033-00	CERAMIC CHIP	0.022MF	50V			
C1404	1-137-035-11	FILM	0.47MF	10%	50V	C243	1-163-033-00	CERAMIC CHIP	0.022MF	50V			
C1405	1-136-107-00	CERAMIC CHIP	0.0047MF	50V	C244	1-163-033-00	CERAMIC CHIP	0.022MF	50V				
*****													
C1406	1-137-035-11	FILM	0.47MF	10%	50V	C245	1-163-033-00	CERAMIC CHIP	0.022MF	50V			
C1407	1-124-910-11	ELECT	47MF	20%	50V								
C1408	1-124-122-11	ELECT	100MF	20%	50V								
C1409	1-126-233-11	ELECT	22MF	20%	50V								
C1410	1-123-875-11	ELECT	10MF	20%	50V								



# J1

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R226	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1457	1-216-025-00	METAL GLAZE	100 5% 1/10W
R227	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1459	1-216-025-00	METAL GLAZE	100 5% 1/10W
R228	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1460	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R229	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1461	1-216-190-00	METAL GLAZE	470 5% 1/8W
R230	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R1462	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R231	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1463	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R232	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1464	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R233	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1465	1-216-023-00	METAL GLAZE	82 5% 1/10W
R234	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1466	1-216-033-00	METAL GLAZE	220 5% 1/10W
R240	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1467	1-216-025-00	METAL GLAZE	100 5% 1/10W
R241	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R1468	1-216-025-00	METAL GLAZE	100 5% 1/10W
R242	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R1469	1-216-025-00	METAL GLAZE	100 5% 1/10W
R243	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1470	1-216-025-00	METAL GLAZE	100 5% 1/10W
R244	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1471	1-216-023-00	METAL GLAZE	82 5% 1/10W
R245	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1472	1-216-023-00	METAL GLAZE	82 5% 1/10W
R246	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1473	1-216-023-00	METAL GLAZE	82 5% 1/10W
R247	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1474	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R248	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1476	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R249	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R1477	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R250	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1478	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1401	1-216-023-00	METAL GLAZE	82 5% 1/10W	R1480	1-216-190-00	METAL GLAZE	470 5% 1/8W
R1402	1-216-170-00	METAL GLAZE	68 5% 1/8W	R1482	1-216-178-00	METAL GLAZE	150 5% 1/8W
R1403	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1483	1-216-178-00	METAL GLAZE	150 5% 1/8W
R1404	1-216-178-00	METAL GLAZE	150 5% 1/8W	R1484	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1405	1-249-429-11	CARBON	10K 5% 1/4W	R1485	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1407	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1486	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1408	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1487	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1409	1-216-041-00	METAL GLAZE	470 5% 1/10W	R1488	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1410	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1489	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1411	1-216-041-00	METAL GLAZE	470 5% 1/10W	R1501	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1412	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1502	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R1413	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1503	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1414	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R1504	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1415	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1505	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1416	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1506	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1417	1-216-023-00	METAL GLAZE	82 5% 1/10W	R1509	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R1418	1-247-738-11	CARBON	82 5% 1/2W F	R1510	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R1422	1-216-025-00	METAL GLAZE	100 5% 1/10W	R1511	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R1423	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1512	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1424	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1513	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R1425	1-216-045-00	METAL GLAZE	680 5% 1/10W	R1514	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R1426	1-216-025-00	METAL GLAZE	100 5% 1/10W	R1515	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R1427	1-216-001-00	METAL GLAZE	10 5% 1/10W	R1516	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R1428	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1517	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1429	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1519	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R1430	1-216-170-00	METAL GLAZE	68 5% 1/8W	R1520	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1431	1-216-041-00	METAL GLAZE	470 5% 1/10W		1-216-111-00	METAL GLAZE	390K 5% 1/10W
R1432	1-216-041-00	METAL GLAZE	470 5% 1/10W	R1521	1-216-214-00	METAL GLAZE	4.7K 5% 1/8W
R1433	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1550	1-216-349-00	METAL OXIDE	1 5% 1W F
R1434	1-249-393-11	CARBON	10 5% 1/4W F	R1556	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R1437	1-249-429-11	CARBON	10K 5% 1/4W				(KV-E2521D ONLY)
R1440	1-216-045-00	METAL GLAZE	680 5% 1/10W				(KV-E2921D ONLY)
R1441	1-216-045-00	METAL GLAZE	680 5% 1/10W				(KV-E2921D ONLY)
R1442	1-216-089-00	METAL GLAZE	47K 5% 1/10W				
R1443	1-216-089-00	METAL GLAZE	47K 5% 1/10W				
R1444	1-216-033-00	METAL GLAZE	220 5% 1/10W				
R1445	1-216-095-00	METAL GLAZE	82K 5% 1/10W				
R1446	1-216-033-00	METAL GLAZE	220 5% 1/10W				
R1447	1-216-033-00	METAL GLAZE	220 5% 1/10W				
R1448	1-216-025-00	METAL GLAZE	100 5% 1/10W				
R1452	1-216-049-00	METAL GLAZE	1K 5% 1/10W	RV1501	1-238-023-11	RES, ADJ, CARBON	470K
R1453	1-216-049-00	METAL GLAZE	1K 5% 1/10W	RV1502	1-238-016-11	RES, ADJ, CARBON	10K
R1454	1-216-180-00	METAL GLAZE	180 5% 1/8W	RV1503	1-238-017-11	RES, ADJ, CARBON	22K
R1455	1-216-180-00	METAL GLAZE	180 5% 1/8W	RV1504	1-238-012-11	RES, ADJ, CARBON	1K
				RV1505	1-238-023-11	RES, ADJ, CARBON	470K
				RV1506	1-238-017-11	RES, ADJ, CARBON	22K

<VARIABLE RESISTOR>

The components identified by shading and mark  are critical for safety.  
Replace only with part number specified.

**J1 IFG**

ACCESSORIES AND PACKING MATERIALS  
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PART NO.	DESCRIPTION	REMARK
*A-1678-001-A	BOX ASSY, WOOFER	
*A-1678-010-A	BOX ASSY (RIGHT), SPEAKER (KV-E2521D ONLY)	
*A-1678-003-A	BOX ASSY (RIGHT), SPEAKER (KV-E2921D ONLY)	
*A-1678-012-A	BOX ASSY (LEFT), SPEAKER (KV-E2521D ONLY)	
*A-1678-005-A	BOX ASSY (LEFT), SPEAKER (KV-E2921D ONLY)	
*3-704-280-01	BAG (STANDARD), PROTECTION (KV-E2521D ONLY)	
*3-704-283-01	BAG (STANDARD), PROTECTION (KV-E2921D ONLY)	
4-200-591-11	MANUAL, INSTRUCTION (GERMAN/ENGLISH/FRENCH/ DUTCH/ITALIAN/PORTUGUESE)	
*4-201-015-02	INDIVIDUAL CARTON (KV-E2521D ONLY)	
*4-200-036-01	INDIVIDUAL CARTON (KV-E2921D ONLY)	
*4-201-012-02	CUSHION (UPPER) (ASSY) (KV-E2521D ONLY)	
*4-200-041-02	CUSHION (UPPER) (ASSY) (KV-E2921D ONLY)	
*4-201-013-01	CUSHION (LOWER) (ASSY) (KV-E2521D ONLY)	
*4-200-042-01	CUSHION (LOWER) (ASSY) (KV-E2921D ONLY)	
*4-380-340-01	BAG, PROTECTION (KV-E2521D ONLY)	
*4-384-027-01	BAG, PROTECTION (KV-E2921D ONLY)	

REMOTE COMMANDER

1-465-797-11	COMMANDER, REMOTE (RM-817)
4-031-670-11	COVER, POCKET (FOR RM-817)